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THE PHILOSOPHICAL REVIEW

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THE PHILOSOPHICAL REVIEW

PHILOSOPHY IN FRANCE, 1929 *

PHILOSOPHICAL literature produced in France during the year 1929 has continued, so far as concerns the central problems of philosophy, logic, and metaphysics, more or less along the lines we attempted to trace out with respect to the years 1926 and 1927.[1] In other words, essentially the attempt has been made to determine, in the light of the transformation wrought by the ideas and insights of M. Bergson, the manner in which our intelligence apprehends reality, and the part played by reason in this apprehension. But while taking this transformation as a point of departure, what we are witnessing is, nevertheless, a general trend towards the earlier doctrines of the classical philosophies, such as Aristotelianism, Cartesianism, and Kantianism or neo-criticism—in sum, *a return to classicism.*

We shall occupy ourselves especially with the outstanding works which mark this course, and we shall undertake to group around them the general ideas of their authors. For what is the significance of a particular study aside from the general notions which it may contain?

We propose to speak, first of all, of a faithful disciple of M. Bergson, who began his labors by elucidating the ideas of the Master, and by applying them to the particular problems of positive science. It so happens that quite recently M. Le Roy has begun to publish, one after the other, the results of prolonged meditations; of meditations dating, in fact, from that now dis-

* Translated from the French by H. R. Smart.

[1] *Cf.* this REVIEW, Vol. XXXVII, pp. 527 ff.

tant period of practical discipleship to the one who introduced him to his philosophical vocation. He retracts nothing, far from it, of this epoch of apprenticeship. But become completely master of himself, he now presents us with his own ideas, his original system, and clearly indicates for us the creative character of his work, beginning with his heritage, and enriching the patrimony.

The recent works of M. Le Roy, including *Les origines humaines et l'évolution de l'intelligence*, *L'exigence idéaliste et le fait de l'évolution*, *La pensée intuitive* (volume I): *Au delà du discours*, and *Le problème de Dieu*, form a vast ensemble,[2] as yet incomplete, since the second volume of *La pensée intuitive*, which will deal with *L'invention et la vérification*, has not yet appeared. We can, however, easily foresee the conclusions towards which our author is tending, for he clearly intimates how he will bring about the completion of the series. For this reason it is difficult to render a separate account of each of the several works so far published. But as M. Lalande has given, in preceding years, an account of the first two works, we shall use these only as a point of departure, and only in so far as it is indispensable to do so in order to apprehend the guiding thought of the two later works. And we shall endeavor not to falsify or to impoverish this thought.

The most essential characteristic, at least to our mind, of *Les origines humaines*, and of *L'exigence idéaliste*, is perhaps the primary rôle assigned to invention in the process of evolution; the close connexion established by M. Le Roy between these two primordial facts of experience—invention and evolution. With respect to human evolution especially, but even before that, as far back indeed as life itself extends, invention figures as the cause of evolution. We have here, at one and the same time, both the point of contact with Bergsonian philosophy, and the point where the originality of M. Le Roy begins to manifest itself relatively to that philosophy.

M. Bergson's philosophy is a philosophy of evolution, of movement, and of progress. It is not without a very definite significance that the work which crowns and completes the exposition

[2] All of these works, with the exception of *Le problème de Dieu*, are published by Boivin (Paris).

of his conception of things, his metaphysics, bears the title, *L'évolution créatice*. For this metaphysics centers around the idea of evolution. M. Bergson was impressed, at the very beginning of his intellectual career, by the evolutionism of Spencer. Moreover, the entire nineteenth century in France, as represented, first by Auguste Comte, and later by Cournot and Renouvier, and German philosophy as represented by Schelling and Hegel, had, we may say, progressively recognized the value of history as a means to the explanation of things. This vital, historical point of view supplants the earlier apriorism, which would determine, once and for all, the destinies of the real. The Cartesian and Spinozistic conception of eternity, for which the changing aspect of transitory modes is only a secondary derivative, is replaced, as an ideal for knowledge to model itself upon, by the conception of life itself, conceived of essentially as something which constantly changes.

But how and for what reason does life change?

For pre-Bergsonian philosophy in general (for there were exceptions: the school of Maine de Biran and Ravaisson, for example, but these men lacked the precision of thought necessary to render their ideas technically utilizable for philosophical purposes); for pre-Bergsonian philosophy, we say, the change characteristic of life was conceived of as consisting in rearrangement, after the model of chemical combinations. The elements remaining the same, the form alone, that is to say, the organization of the elements, was supposed to modify itself in a continuous manner. This is what M. Bergson calls a process of change wherein at bottom nothing changes, an evolution wherein nothing evolves. It is a mechanistic evolution of the kind first clearly defined in the Lamarckian system, and upheld in quick succession by Spencer and Darwin. The psychological theory of creative imagination, of invention, was from this point of view entirely representative. Imagination was explained by the psychologists as a rearrangement of psychological elements or atoms, considered as severally well-defined and immutable, the images of primitive sensations. The entire process of creation consisted of a new order imposed upon these elements, the perceptual image being nothing more than the primitive and natural order, established

by chance or by the conditions of conscious apprehension, among these same elements.

M. Bergson delivered a fatal blow to this conception, so inadequate to experience by reason of its too rudimentary simplicity. In the first of his three great works he insisted that freedom was of the very essence of consciousness, and that this freedom meant intrinsic power of invention. We shall refer later to his theory of spiritual creativity. For the moment we wish to dwell on the meaning of the term 'intrinsic'. It is well to note, in this connexion, a fact too often overlooked, namely, that, in spite of their mechanistic pretensions, the older theories necessarily acknowledged the existence of a creative power. To arrange immutable elements in a new order is in fact to create; for the rearrangement, the organization, the new form, the new relations imposed upon these elements—all are novel, something created. An efficacious power is as necessary to extract order from the void as to extract the elements themselves which are rearranged in that order. But this issue was avoided both by psychological and by biological determinism. The former found the causes of this rearrangement in the 'laws of association', while the latter attributed it to the necessary movements of the elements themselves. In opposition to Descartes, who assumed that change of direction did not imply a necessary force, Leibniz argued that such a force was as essential as it was to establish motion. As a result of this line of reasoning change might be interpreted as a function of an extrinsic force applying itself to elements, of themselves and in the relevant respects inert. This theory, which had become so to speak classic, accordingly explained the presence of novelty in psychological invention and the appearance of diverse biological forms in the same way that it explained the novelty in any effect with respect to its cause, *i.e.*, in terms of the necessary conditions which determine a new order, a rearrangement, of elements considered in themselves as permanently self-identical. Thus determinism, as well as the principle of the 'conservation' of elements of all kinds, was preserved, while at the same time an explanation was afforded of the non-identity of effects relatively to causes—a non-identity postulated by every scientific interpretation of becoming, since effects are

always new relatively to their causes. By this subterfuge, conceived simultaneously with the first reflexions concerning the intelligibility of the process of becoming, the principle of identity and contradiction, afterwards formulated more precisely by Aristotle, was observed by the Greek science and philosophy of the second half of the fifth century B.C. More precisely, this principle was hit upon and formulated to render experience intelligible and explicable, after the shock which Parmenides gave to thought. And this procedure has explicitly been that of rationalism in general, and more definitely still of that special type of rationalism which is called Science.

It is this procedure, after the sceptical observations of all times, and the analyses of Hume, that the Bergsonian philosophy is going to put a term to, so far as concerns the veritable and profound explication of reality. In the last analysis, a rearrangement of elements is unable to account for a novelty really deserving of the name, for invention or creation, of whatever sort it may be. Such a rearrangement is only a lifeless symbolism of a universe arbitrarily and ideally cut up by the mind. In itself novelty is irreducible. It is given immediately and directly in consciousness. Completely arbitrary and artificial is the idea that it is mere appearance, masking a reality consisting of the mechanical rearrangements of unchangeable elements. In reality the latter is a construction of ours, effected for the sake of practical, subjective ends; it is superimposed upon the real, added to it from without. In itself reality is what is given immediately to consciousness in its qualitative, specific and irreducible aspects. There is an impassable gulf between a static rearrangement, a conceptual construction of elements not given in experience, and the slight shades of difference which distinguish the present from the past, the earlier from the later, and the future from the present. At best such an artifice reveals itself as merely a convenient arrangement for facilitating our action upon the real, as a symbolism necessary to that type of intelligence which turns away from what it must really seek to understand, and which has no other end than the satisfaction of subjective needs.

Whatever evolves is living. All novelty is dynamic and vital creativity. Therefore life alone can furnish us with the clue to

comprehension, should we desire to comprehend, to grasp reality itself. The static, mechanical view of things is only an external appearance conferred by our acts and artifices upon them. Applying ourselves to life itself, and to instinct its expression, which motivates it from within and is indeed this life itself, engaged in the work characteristic of it, we enjoy immediate contact with the real. We come into direct contact with it and its movement. We have passed beyond action and its external or subjective conditions, and have attained to what acts; we have turned from the finished work to the maker, from the created object to the creative effort.

Evolution as conceived by Spencer is not, in reality, genuine evolution. It consists of a gigantic cyclical determinism, wherein everything is, in principle, given to begin with: a process of change which does not change, a continual repetition of the same, for which the novel is only an appearance attached to an eternal foundation.

Now for M. Bergson analysis comes to an end in creative instinct, in its unconscious essence. The moment we attempt to make things explicit, in order to attain what we regard as a clear and distinct apprehension, we alter them to a greater or less extent. The resultant dualism between the knowing subject and the object known is a certain proof of this. In the intimate and continuous application of action to material, as revealed in instinct, in some sense without differentiation, at the time the act occurs, between agent and material, we find the model according to which the new creates itself relatively to—and not merely at the expense of—the old.

M. Le Roy, it seems to us, accepts his master's analysis in its entirety, with the exception of its conclusion; hence all its principles and premises. But as for the conclusion itself, while preserving what is vital and dynamic in it, he at the same time modifies it by bringing his attention to bear on the idea of invention in such a way as to lend a new color to his doctrine. Evolution is creative as a whole and in all its parts,—thus to obvert the Leibnizian phrase, "the world is a machine in its smallest parts". But it is creative precisely because, in the psychological and human sense of the word, it is 'inventive'. In order to under-

stand what constitutes the creative virtue of evolution we must certainly consider life and instinct, but we must also consider invention as it manifests itself to us in the psychology of the fully developed man. The higher will explain the lower. And it will explain it by starting from itself. Clear consciousness, intelligence, reason, do not merely create artifices enabling us to direct our activity most successfully. They are also, as it were, the 'memory' of processes by means of which all creation is effected, by means of which all creation explains itself. And they are the 'memory' of such processes at the same time that they are their completion and their crowning phase.

Life, in fact, is essentially invention and habit. But it can only be habit after having been invention. We have here, manifestly, a development of M. Bergson's thought. This development emphasizes the significance of consciousness, for even biological progress is due, through invention, to a consciousness—however remote from our own it may be—of means and ends, of conditions and aims. It also emphasizes finality, which M. Bergson obliged himself to eliminate from his scheme of *Creative Evolution*. M. Bergson took over the objections of the biological sciences against the traditional conception of finality. M. Le Roy does not, perhaps, quite accept this traditional conception, but he comes near to doing so when he assumes—with Spencer, although in a wholly different sense, naturally—that the mechanism of reflexes, of instincts, in short of all kinds of habitual action, was originally invention, and hence a manifestation of spiritual freedom. At bottom his views in this respect closely resemble those of Aristotle and St. Thomas. M. Bergson took account of Cartesianism, while going beyond it, or rather re-interpreting it in terms of his own dynamic conception of things. Still further beyond Descartes, and in a certain manner even transcending the very essence of his doctrine, M. Le Roy reappropriates the medieval and Christian tradition, which on this point is the offspring of Aristotelianism. The result of all this is that his insight into biological phenomena, constantly becoming more exact so far as invention is involved in them, is not without relationship to the Aristotelianism of a Ravaisson. Paleontological history, the history of life, supposes a factor which is, *mutatis*

mutandis, of the order of psychological and human inventiveness.

La pensée intuitive will render more precise what must be understood by this factor. We shall come to that in good time. In the meantime we may note that the work which figures as a continuation to *L'exigence idéaliste*, namely, *Les origines humaines et l'évolution de l'intelligence*, explains the ancestry of man by the same principle, and the more easily, since it is no longer here a matter of biological evolution in general, but of human evolution in the proper sense of the word. The psychological factor of invention thus has a definite rôle to play, as a general explicative factor. The most interesting of the conclusions which we have to note here presents itself as still, essentially, an original prolongation of Bergsonian thought.

As is well known, Bergson contrasts intelligence with instinct, for from the latter comes intuition, the real source of knowledge. The intellect constructs various artificial notions of things. These notions are useful technologically, and contribute both to the knowledge upon which technique is based and also to the apprehension, so to speak, of the conditions of action upon external things. Intuition, on the other hand, by an immediate sympathetic penetration, which is in some sense part and parcel with the thing it penetrates, experiences and knows this thing in its inmost being. Instrument of analysis and elaboration, the intellect mechanizes its object; intuition identifies it with force, with that dynamic energy which we directly experience in ourselves and only in ourselves. The former spreads things out and reflects upon them from the point of view of their extension; the latter concentrates them and contemplates them from the point of view of their intension, of their tension. In short, the one point of view is external, the other internal, to the object in question. True, after having burned the bridges connecting the banks of the stream of knowledge, M. Bergson establishes numerous passages between them. Human knowledge somehow works from both sides, in contrast with instinct, which digs from only one side. Language (signs), offspring of action, is intimately bound up with intelligence and reason, along with which it is created. Now all human knowledge, and therefore intuition, can attain to clarity

only when moulded and expressed in intellectual forms. It nevertheless remains true that whoever wishes to recover reality in its purity (so far as that is at all possible) must seek to break through these intellectual forms, in order to put himself on the level of immediate intuition (so far as that too is at all possible).

Now it seems to us that M. Le Roy ascribes to the fusion of intuition and intellect, and consequently to the intellect for itself, a more positive value. This fusion has become, in his thought, the essential characteristic of human nature, the essence of what he calls *homonisation*, in that part of biological evolution which terminates in man. Strictly speaking, our mind consists, not in a power of contemplative intuition at once united with, and basically opposed to, an intellectual force directed to practical action, but rather in a power of intuition developing within the intellect, sometimes surpassing it as such, and culminating in a more profound intuition, in the form of invention, return to immediacy, and mystical contemplation. But in this three-time rhythm there is place neither for opposition nor for an open break. We must therefore guard equally against confusing it with the Bergsonian rhythm which involves opposition, and with the intellectualist rhythm, which also involves an opposition, in the contrary sense.

It is true that the Bergsonian opposites agree with and conciliate one another; they unite, as does the expression and that which demands expression. But there remains an irreducible incommensurability between them. And the roots of the two faculties, like their terminations, remain antithetical. For M. Le Roy the antithesis manifests itself in the course of the development, and as a result of a mutilation, of the intellect, which thus becomes conceptual and discursive, whereas in its own nature it is intuitive. Intelligence is in reality only clarification, a rendering precise of the intuition, a faculty of invention and of creativity, and not of ratiocination. Intellectualism has sterilized the intellect into habits and ideas, which are only stereotyped habits of thought. The intellect itself lives only in creative freedom, and follows the path of intuition. Invented by the intellect, and integral to *homonisation* in virtue of its 'ready-made' structure and its formulas, language is chief aid to the intellect in its conceptualistic,

ratiocinative endeavors to effect a crystallization of reality. But we must follow the active intellect, prolongation of intuition, beyond discourse, beyond discursive forms (in the etymological sense of the word), along the route which makes man a being capable of knowledge and spiritual in nature.

We come, then, to the third work by M. Le Roy, *La pensée intuitive: au delà du discours*. With its second volume, which will complete it and solve its problem by finally defining invention, this is the work which gives significance to the trilogy, and renders explicit the nature of human thought. M. Le Roy himself, while calling attention to the divergence of his own thought from that of his master, points out that the latter is the source of his own theories, and that the premises posited by the master are supported in their entirety by the disciple.

Intuitive thought is thought transcendent to discourse, thought whose complete insight into things cannot be formulated in concepts represented by words, and in assemblages of concepts arranged according to the rules of syntax, *i.e.*, the forms of language stereotyped by habits of thought. Like every habit, conceptual and ratiocinative thinking (rational in the current sense of the word) has mechanized itself. It has left on one side everything vital in thought, everything that constitutes real and profound understanding, in order to retain mere signs in their common, everyday significance, deprived of true originality and creative virtue. Intuitive thought, on the other hand, is invention, and nothing but invention. And in its rudimentary forms it is much more common than we are accustomed to believe.

Let us not conclude that it proceeds unmethodically and capriciously just because it breaks through the customary forms. It is neither the inspiration of the lyricists nor a pseudo-mystical effusion. Or rather it is indeed related to the former on one side and to the genuine mystical effusion on the other. But to a certain extent it lends itself to analysis and universalization (which are all one). And we must engage to understand it. Here again M. Bergson has supplied the principles. We need only interpret and develop them in the direction M. Le Roy proposes to follow. We know the theory of the dynamic *schema* which the philosopher formulated in the culminating chapter, "*l'effort intellec-*

tuelle", of his book entitled *L'énergie spirituelle*. Since all memory is in the last analysis invention, both memory and invention find their explanation in terms of a creative act of the mind. Such an act organizes, around a single, indivisible end, which is at the same time the center of its activity, the means destined to realize it, whether this end be a memory to be recovered in its concrete entirety from a trace ever so slight, or a work of invention in the field of science, of art, or of technology. This dynamic schema is the very form of intellectual initiative, and is what gives to it its positive and universal method—its manner of functioning. Thanks to this dynamic Bergsonian schema, we can rid ourselves of vague banalities about the mysterious activity and the chance-like character of inventiveness and genius. We can now connect them with the general activity of thought, and we can render precise the details of this activity, just in the same fashion, according to M. Le Roy, as logicians have rendered precise the procedure of conceptual thinking.

This manner of functioning consists in a return to immediacy, in a reconquest of immediate experience, from which ordinary perception and conceptual thinking, supporting each other, have separated us. The return to immediacy therefore does not spell a pure passivity of mind with respect to things; it is rather an act which takes possession of the real and the true by a creative deduction—such, *e.g.*, as is exemplified by progress in mathematical thought.

In sum, Bergsonianism issues in an idealism which, through analysis of intellectual activity, permits the dialectical and systematic—systematic in the sense for which the organization of life is the model—reconstruction of the tendencies and principles of the mind. And this idealism, which affirms, as does all idealism, the identity of being and thought, affirms it as the expression of a creative act, by which it ultimately identifies itself with spiritualism and with Bergsonian spiritualism in particular.

The *Problème de Dieu* [3] consists only of an illustration and extension of this metaphysics; or rather represents its culmination, in a treatment of what is at once its chief and central problem. The reconquest of immediate experience is not a return, a 'reflex-

[3] Cahiers de la Quinzaine (No. 11 of the 19th Series), L'Artisan du Livre, Paris.

ion', in the sense of idealistic philosophy. On the contrary, we must see it as a procedure which, even in its deductive aspect—a deduction no longer discursive but intuitive, *i.e.*, penetrating and concrete—, transports us to the very heart of reality, or nearer and nearer there. Metaphysics ought therefore to have its immediacy as well as perception or conception, when we have once learned to leave them on one side in order to attain to absolute reality and absolute truth. In what could this immediacy consist, as present and living in us, in the sense of these words which is intellectual and mystical at the same time, if not in the Supreme Being in all His fullness? To seek God, to unite oneself to Him, to act and move in Him, to feel, to demonstrate His existence, His presence—at bottom all of these expressions are synonymous. And they amount to this grasp of the immediate in which the act of thought, *i.e.*, thought itself, essentially consists. Rational, conceptual demonstration would be just nothing at all, were it not the envelope, the expression, of that intuitive demonstration which lends it meaning and effective value. For reality is inherent in thought, and the hierarchy of the values of thought imposes on reality its organization, and fixes its center in the purity of spiritual activity.

May we hazard a conjecture by way of conclusion? Is not this culmination of M. Le Roy's system, which he reaches in his *Problème de Dieu*, the prime mover and the key to all his thought? What constitutes the basis, both of the intellectualism of our philosopher (in the sense which he ascribes to this term), and of the original extension of his thought beyond that of M. Bergson, if not its "metaphysical immediacy" and the emphasis upon the *act* by which we gain possession of it, subsequently transposed to every degree of the intellectual hierarchy, from the highest to the lowest? His latest works, on the other hand, induce us to follow the reverse route.

We do not say that M. Lalande transports us to another pole of philosophy; that were to make an abuse of dialectical antitheses. In so far as we get to the bottom of them and rethink them, such antitheses in a large measure vanish. It is true that one could maintain, to adapt the well-known aphorism, that only in those respects in which they deny each other do systems have any

worth. For in their positive parts, such as they are . . . poor systems! Hence contemporary philosophies, especially French philosophies, and more particularly still that of M. Bergson, for which it is a tradition, deny the desire to be systematic. They represent themselves rather as methods and as approaches to the truth. M. Le Roy's philosophy, it seems to us, is indeed one of those which most directly strives for the absolute and for system. And in this respect it adds to Bergson's philosophy while making use of his method.

Now M. Lalande's method presents itself as entirely different from that of M. Bergson and M. Le Roy. It follows another direction, namely the traditional and classic tendency of rationalism. M. Lalande is a logician as well as a philosopher. He approaches philosophy by way of logic. Before occupying the chair of philosophy at the Sorbonne, he occupied that of "logic and the methodology of the sciences". And to the chair of philosophy he has brought his first way of teaching. Accustomed by logic to the traditional demands for proof, he would not admit that a return to immediacy, even if understood in the sense of a reconquest of immediate experience, bore on its face its own certificate of truth, and, without anything additional, was exhaustive of concrete reality. Certainly he is far from denying that besides conceptual thinking and reasoning there are other means of knowledge. Does he not posit, alongside of established reason (*raison constituée*), a constitutive reason (*raison constituante* [4])? But again, he does not at all hold that thought supplies itself with its own object, is itself the source of reality. Thought applies itself to objects, it adapts itself to reality—or rather it adapts reality to itself. But it is the way of truth, *i.e.*, the road we must travel to test our knowledge. Knowledge which resists this test is not clear; it ought therefore to awaken a certain mistrust, and to be envisaged only in the light of certain precautions and reservations. For knowledge which is not clear is neither fully knowledge nor full knowledge. Mystery is the opposite of knowledge. No doubt knowledge begins with the mysterious and obscure. No doubt also it is always associated with ob-

[4] Somewhat in the sense in which, during the French Revolution, we had, after the Constitutive, the Legislative Assembly.

scurity and mysteriousness, and brings both into being, the more we 'know'. This is understood from aforetime. But that of which it can be said that it is 'known' is what can and ought to resist the test of logical criteria. What remains is either probability—in various degrees—or uncertainty, or an enigma, before which the mind, in quest of certainty, suspends its judgment. If the mind adheres to this residue it does not do so for reasons that reason apprehends, and not in the same way in which it adheres to a universal truth. Only logic can attain the latter, compel assent, and oblige one, willy-nilly, to accept its rule. M. Lalande is the author of a deservedly celebrated definition of truth, namely, "truth is the agreement of minds with each other, the agreement of minds with things", through the assimilation of the latter, and "the agreement of things with each other". In reality, the agreement of things among themselves is presupposed by the agreement of minds with things. It is the first stage of such agreement. Formal logic guarantees the agreement of minds with each other. And, up to the present, nothing else has shown itself capable of bestowing this guarantee. It is easy to see, we believe, that in the end this will always be the case. The principle of identity and of contradiction together with the other principles which must be added, in order to establish a basis for formal logic, make possible what is at bottom synonymous with this, namely the agreement of the mind with itself. The agreement of the mind with things, *i.e.*, with reality, the taking possession of reality by the mind, must submit first of all to the criteria of formal logic. For in order that the mind agree with things, it is necessary, either prior to this agreement or paralleling it, that it agree with itself. Necessarily, therefore, if the agreement of the mind with itself, and the agreement of minds with each other, are synonymous expressions, then minds must agree with each other in respect of the things which they seek and establish their agreement.

The crowning work of M. Lalande's, which made its appearance this year,[5] *Les théories de l'induction et de l'expérimentation*, is one which will mark the date in French philosophy and in the history of logic. Its present importance cannot be exaggerated. The

[5] Boivin, Paris.

aim, as its title indicates, is precisely to examine into the nature of the agreement of minds with each other with respect to things—or, if it be preferred, the means of establishing universal agreement with respect to things, the value of the judgments we frame concerning experience and by reason of it.

From the logical as well as from the psychological point of view, induction is a disconcerting procedure. It has constituted a great difficulty and bone of contention among logicians from the time of the Socratic schools, and has been a consciously formulated problem since the time of Aristotle. If we confine ourselves solely to the period beginning with the seventeenth century, where it figures, with Bacon and Galileo, as the fundamental operation of the natural sciences, as the operation through which we believe ourselves to be, and really are, informed about things, we grasp the major importance of the question. Now if induction be *in fact* the sole means we possess of knowing, in the true sense of the word, things, external realities, *in theory* there is no agreement concerning the nature, the value, and the certification of this instrument. These three questions really reduce to one, and M. Lalande proceeds to study them under the heads of *the technique*, *the principles*, and *the foundation*, of induction.

The logical mystery of induction may be expressed, roughly, by the question, 'How can we pass from singular assertions to a universal law?' (we avoid such equivocal expressions as the particular and the general, their opposition having only a distant and vague relationship to the jump which constitutes the inductive enigma). But this formula is incomplete. We must add: 'at the same time determining the degree of validity of this transition, and guaranteeing it in the limiting case'. We find here, in another form, the three questions posed by M. Lalande, and enunciated as well by the present writer. The number of works which have treated of these questions, in one form or another, since the time of Aristotle—and especially since the time of Kant—, is indeed considerable. The first ten chapters of the present work (224 pages out of 283) are devoted to the historical record, and at the same time to an elucidation of the problem of the technique and of the 'how' of induction. A 'history', we say, and this is the right word if we take it in the necessary signi-

fication. In reality history in the realm of ideas, quite as much as in the realm of facts (politics, wars and battles), is not and ought not to be a mere 'sum', a seeking out of all the facts, the most minute as well as the most important. It is selection, the tracing out of a route by its main stages, its salient features. It undertakes to comprehend, not only facts, but also their development, to translate a series of events into a series of ideas. It should include only whatever marks a change of direction and whatever indicates its meaning. From this point of view, as from many others, M. Lalande's work is masterly. He has made out what enables us to understand, little by little, in the course of the evolution of ideas (here it is the evolution of scientific thought, and of science itself, indissoluble as soul and body), wherein induction consists, *as a fact*, and how the logical procedure establishes, develops, perfects itself. Aristotle and induction by simple enumeration or perfect induction, which in the last analysis and from the point of view of a logical proof is the true induction, especially if we envisage it in those primary forms from which all the others derive; ampliative induction such as is found in actual scientific work, where every induction is offspring of so many others preceding it and hence not to be understood without them; Archimedes; Alchemy; Bacon, to whom two chapters are devoted (and it may be said that for the first time the traditional errors which have ceaselessly disfigured the true thought of the Lord Chancellor, are, every one of them, pitilessly thrust aside); Descartes and the theory of hypotheses in the seventeenth century; Newton and the Newtonian spirit of the eighteenth and nineteenth centuries; Whewell finally restored to his proper place, which is in the front rank; John Stuart Mill and Claude Bernard —such are some of the subjects dealt with in the course of this part of the work.

The technique of induction is depicted in this remarkable frescoe as the very spirit of the natural sciences; its history as the history of this spirit. And at the heart of this history there appears a fundamental antithesis between the idea of science as description, a catalogue of facts—a description, be it understood, ordered and adapted to the mind—, and the idea of it as a structural explanation of the facts—while at the same time, neverthe-

less, we find a convergence between two so diverse points of view as science builds itself up. The theories of induction lead us to *a* theory of induction, at least as a prospect of the future.

This convergence leads us to the conclusion so admirably formulated by Claude Bernard, namely that induction is not the passive registration of facts; that experience is not empiricism; in short, that induction is indeed the process of forming the concept, which again is always a synthesis of judgments. Induction is 'ideal', and the inductive method is in reality hypothetico-deductive, a fact which bridges the gap between the so-called experimental, inductive sciences, and the so-called rational, deductive sciences; between natural science and mathematics. Thus conceived induction is a complex operation which cannot be reduced to the abstract simplicity of a logical schema, to a form, as in the operations of formal logic—if indeed there be nothing here more than bare form, no vestige of thought which transcends such forms. The mind does not enjoy in induction an immediate and unmixed satisfaction. But in a less facile, less manifest, and less immediate fashion, it finds a fuller and more profound one. The last two chapters are a successful effort to make us understand, through analysis, the nature of this satisfaction. The problem is the determination of the principles and foundation of induction.

By 'principles' is meant, in the customary sense of the word, the postulates requisite to establish the validity of an induction. In other words, the conclusion of an experimental investigation will satisfy us intellectually if, and only if, it conform to these postulates. But tradition has sought and generally imagined itself to have found these principles in a structure of the world, or in a structure of the mind in so far as the mind imposes a structure on that world which we are capable of knowing: a structure denoted, *e.g.*, by such terms as causality, teleology, reciprocity of action and reaction, stability, permanent substances, etc.

All such notions amount in sum to a principle of legality, to the conception of a rigorous and universal determinism (Claude Bernard). And this principle is very nearly equivalent to that of the universal, though only virtual, possibility of deduction; the deducibility of concrete reality. So nearly equivalent, indeed, that the principles of induction would be those upon which deter-

minism would itself depend (Kant, Lachelier),—and, for us, this road must be travelled to the point where a reduction to the principles of deduction would occur. There would be only one process of reasoning—rational or logical deduction, in which mathematics would participate, or rather, which would absorb mathematics. Induction then, would be only an instrument, a procedure of the sort Descartes conceived experience to be, preceding deduction, beginning with the ascertainment of particular facts, and, more especially, of privileged facts.

But the entire theory of induction thus rests on a conception of the structure of reality—a reality embracing at one and the same time both object and subject. M. Lalande is a logician through and through. He cannot allow this circle (which is not, perhaps, a vicious one), wherein induction is assigned the task of revealing the structure of the world, and receives its basic principles from that structure. Or rather, if, in his last chapter, he allows a circle—perhaps inevitably—with respect to the guarantee and foundation of induction, this circle will be a logical one and not metaphysical. For the moment he seeks only the logical structure of induction, and logical principles. Induction is a logical procedure and ought to be studied as such, by a method which the very nature of logic imposes upon it.

Now what is logic? It is a *normative* science. It does not seek necessary laws, but directs its efforts instead to the formulation of practical rules. The principles of induction are not, and cannot be, structural necessities, either of the given or of mind. They are rules "definitory of what we may legitimately expect and predict, and of what it would be reasonable to expect even although it should not actually be realized". The tremendous rôle played by probability in every induction leads of itself to this view.

M. Lalande has devoted the greater part of his instruction at the Sorbonne to the definition of the normative sciences, to distinguishing them from the "sciences of laws", and to the study of the field marked out by these normative sciences, and especially by logic and ethics. The parallelism which he institutes between these two disciplines from the point of view of form and spirit, without suppressing their differences, and the parallel which he

draws between rules of morality and rules of induction, both of which incline but do not determine, are most suggestive in this connexion. This is perhaps the most original and opportune portion of this original and opportune book. It will easily be believed that if we had space for discussion, and if this were the proper occasion, this doctrine is the one which we should have most difficulty in accepting.

M. Lalande reduces the principles of induction to three rules of intellectual action, namely, (1) the principle of *deducibility*—not in the sense of a deduction of actual effects from their causes, but in the sense of methodical or formal deduction; (2) the principle of *complimentary probabilities;* (3) the principle of *universalization*. The question of principles thus resolved, the problem of the foundation of induction is very near solution. The great difficulty of classical theories was, given a structure of the universe, how to supply it with a foundation. We are not speaking here merely of a quasi-material structure; we are using the word in its widest meaning—an architectonic, a plan of the organization of knowledge, an organizing plan of reality.

Now a structure, in this its most general sense, presupposes itself. Its postulates are not self-evident axioms. What is there, indeed, which clearly merits this characterization, after the criticism of the last century, and especially of its end? These postulates are 'requisites', justifying themselves neither by themselves nor of themselves. Let us speak the word: they are *hypotheses*, in the logical sense. But this means that induction cannot be based upon them. Both as support and as accompaniment, they require a foundation; and this cannot consist merely in a more general hypothesis, since that would necessarily restrict us to a more or less subjective axiomatic. What is called for is a foundation which would also serve for this presupposed structure; in other words, which would insure its solidity. We need a guarantee which would assure us that by observing necessary and sufficient conditions (the principles of induction) we could distinguish an erroneous conclusion from a veridical one. It would be to the theory of induction what the laws of the distribution of terms are to the syllogism. Here we have something that has heretofore been sought for in vain, for the search always terminated either

in a vicious circle, or in an arbitrary and hidden presupposition, or in pure and simple inadequacy.

Now the view of M. Lalande renders us the very great service, that in the last analysis it makes it possible to dispense with the question. An induction based on the necessary laws of reality demands that in their turn these laws be certified and guaranteed. But an induction conceived of as a purely logical procedure, which builds itself up in virtue, not of presupposed laws whose legitimacy we have had to establish, but of rules which enable us to make headway, requires neither certification nor ulterior basis. Roughly speaking, we may say that we have only to observe the rules derived from the establishment of previous successful inductions; just as, in the last analysis, a syllogism is valid if we have successfully observed the rules of syllogistic procedure,— rules put into Latin verse and in that form serving as nourishment to our youthful minds in the course of the study of logic (in France during the last year of the cycle of secondary studies). We can, of course, make mistakes. There are certain inadequacies in our rules. And these shortcomings are inevitable in a process as complex and with as many broad attachments as induction necessitates. But as a general rule a well-executed induction would be held to be valid if it applied to a real object, just as with syllogisms; and this is legitimate. It is not, perhaps, impossible to suppose that a man, *i.e.*, a biological organism, may, in an exceptional case, be immortal. Unicellular organisms are logically so; and, as we know, the cell is itself an organism and very complex; and man is only an assemblage of cells . . . etc. . . . . If every man *knows* that he is mortal, but if, as has been said, no one *believes* it, from the point of view of confidence in the major premise of the best-known syllogism, then there exists for every man who enunciates it an exception which renders obsolete *belief* in the conclusion.

But let us return to M. Lalande's own ideas, less paradoxical and more certain. The question of the foundation of induction does not arise in a categorical manner if the principles of induction are reduced to rules, and if logic, a normative science, enunciates these rules, without pretending to build up by their aid a metaphysical construction.

"The reply is in the question. Has it a real meaning? If the answer be *No*, it is useless to linger over it. If it has a meaning, induction is regarded as legitimate as a general rule, even though this or that particular induction may be inaccurate. For the very idea of lead, and the idea that tomorrow lead will still exist, involve the permanence of the connexions set up by prior experience among the physico-chemical properties which constitute a substance lead. In order that tomorrow have a meaning it must be admitted that the sun will not have disappeared, and that the earth will turn as in the past on its axis; for 35° to signify something, we must subscribe in principle to the validity of physical science and mathematics. Our choice, then, is limited either to the acceptance of the inductive procedure, or to an absolute scepticism suppressive of all thought. And we must not say merely all thought of the future, for, except for immediate memory, knowledge of the past itself presupposes the value of our generalizations and the existence of deductive rigor, even were it reduced in its applications to certain domains or within certain limits. There would be no history, it was long ago observed, were it assumed that the general laws of nature or of human nature were not at the time of Pericles what they are in our own days. And the very notion of a guarantee implies permanent realities, definite demands which such or such type of activity must satisfy.

"What remains intelligible, in the question which we have taken as typical, is therefore simply to know whether, in fact, thermometric figures of the melting-point form a generally stable and well-defined class; and that, as a matter of fact, can be believed without falling into an absurdity. But then the reply belongs to technology, and, as we have seen, is affirmative. Once the legitimacy of certain inductions has been posited as a fundamental rule, 'experience teaches us to what extent we may disregard experience'." [6]

In an appendix M. Lalande examines the most interesting works—those of Dorolle, Keynes, Nicod and Bachelard—which have appeared on the subject of induction since he gave the course of lectures on which his book is based.

M. Bachelard has produced, this last year, a very interesting

[6] *Op. cit.*, pp. 250, 251.

work on *La valeur inductive de la relativité*.[7] The title itself indicates the relation of this work to the problem which has just occupied us. It is not, however, of this work that M. Lalande speaks—for it had not yet appeared. The work with which the *Theories of Induction* is concerned was one of the theses of M. Bachelard for the Doctorate in Letters.[8] It treats of the doctrine of approximation. It is clear why a chapter should be devoted to induction, because of the essential rôle probability plays in it. Now M. Bachelard was struck by the fact that it is customary to say: 'Newton's system represents the first approximation of our knowledge of the mechanics of gravitational phenomena, while Einstein's system realizes a more advanced, detailed and complete knowledge, which, by the normal use of numerical simplification, reduces to the results obtained by Newton'. And our author proceeds to examine this relation of approximation. He is carried along a great distance (much further even than the problem with which he begins suggests) to a remarkable philosophical examination of the theory of relativity in its entirety, both the restricted and the generalized (the distinction between the two has a certain importance here), and including the memoirs of Einstein as well as the works in which his disciples, Eddington, Weyl, and De Sitter, have undertaken to go beyond him.

The introduction already indicates the route our author will follow, in order to arrive at the following conclusion: "What is novel in relativity is not static in essence; it is not the nature of things which has surprised us, but rather the mind which is surprising itself. Relativity is more than a definite innovation in the manner of conceiving physical phenomena; it is a method of progressive discovery."

Relativity thus seems to be without historical antecedents. "It seems to have no relation with history save through a dialectical rhythm. It posits itself in opposing itself." Is relativity more certain and more regular with respect to its experimental connexions? At first glance it does not seem so. "It was born, as we know, of an experiment which failed. It consequently represents a break with a body of experimental evidence upon which a long series of proofs had bestowed great significance."

[7] Vrin, Paris.

[8] The official Doctorate in France requires two theses.

As can be forseen from these citations, M. Bachelard's conclusions are idealistic, but of a sort having nothing in common with Mr. Eddington's subjective idealism. According to the latter, a man found in the sand, on an island which he fancied deserted, traces of footsteps. . . . And these footsteps, he perceived upon examination, were his own.

For M. Bachelard relativity affords us, at one and the same time, an enlargement of thought and a methodical completion of intuitive experience, for it draws its inductive power from two sources, experience and mathematical reasoning. Those, it will be said, are the two universal sources of knowledge. True; but in this case the two sources converge in a sharper way than elsewhere. Nowhere, therefore, may one better observe their underlying unity. In an idealism very nearly akin to that of M. Brunschvicg, to whom M. Bachelard might well have dedicated his book, we arrive at a conception which ultimately identifies experience and reason. For the latter is only the assimilation of experience by the mind, and experience is neither more nor less than what is capable of such assimilation. And this to such an extent that thought finds itself, if you will, confronting itself, because the universe is itself nothing but thought. "Thought and what is thought about—these amount to the same thing." This, we may observe, is the only formula of a coherent idealism, as was already clear to the founder of idealism himself. It is true that Parmenides has also been accounted the first consistent or critical realist. He has even been called a materialist by Burnet, who put a forced meaning on both the plain terms and the veiled utterances in the poem of the Eleatic philosopher. We, who believe ourselves to be radically realistic, can only subscribe both to Parmenides' formula and to this interpretation of the theory of relativity. May this not be because the dictum *τωὐτόν ἐστι* is applicable both to radical idealism and to radical realism?

The idealist Bachelard shows (1) that the scientific theory is not merely a more or less convenient means of summarizing experience [9]; (2) that the procedure of successive approximations in the results yielded, if we may use the expression, by the mathe-

[9] As the result of an examination of the "Theory of Physics among Contemporary Physicists", in 1907, we reached the same conclusions.

matics of physics, resembles inductive procedure as closely as twin sisters; (3) that the thought of the mathematician generalizes to the highest possible degree the conclusions (we prefer this word to 'results') derived from experiment and consequently leads experience constantly to transcent itself [10]; and (4) that what is at the same time both objective and real (at the same moment and under the same relation) is not the terms between which the relationship holds, but the relation itself (*i.e.*, according to us, the mathematical object itself). But all this is as realistic as idealistic, for it is all positive in spirit.

The agreement, for whoever reasons consistently, between a veritable idealism and a complete realism [11] has such great significance that the capital import of M. Bachelard's work for contemporary philosophy is easily grasped.

The two theses sustained by M. Ch. Brunhold this year,[12] bear on the same problems in a more historical manner and more objectively, from the point of view of historical documentation. For this reason we cite these works here, although their discussion properly belongs to next year's survey. They bring to light the tendencies—more precisely (for these tendencies are not, as is sometimes thought, all of the same nature), the direction—of a French philosophical school that is attracting to itself a number of adherents. These adherents were trained, originally, in our scientific faculties and schools. From there they come to philosophy. In France there has always existed a strong tradition of this kind, beginning with Descartes and Pascal, and continuing with d'Alembert, H. Poincaré, Duhem *et al.* Both M. Bachelard and M. Brunhold are professors of physics in French educational institutions. It will be seen that M. Brunhold, whose primary interest is in the history of scientific ideas and not in philosophy in the strict sense of the word, like M. Bachelard, has studied, in this spirit, the problems of the reduction of physics to mechanics

[10] Such, also, was the rôle we ourselves assigned to mathematics in "The General Hypothesis, or Physical Theory".

[11] An agreement which well explains the propriety of the application of the epithet 'realistic' to Platonic idealism, and, with less consistency, to the greatest of Plato's disciples, the representative of a mode of thought to which Hellenic idealism on the whole remained faithful.

[12] *L'entropie*, and *L'affinité chimique* (Masson, Paris, 1930).

and of chemistry to physics. And this led to the rediscovery of the great problem of the relations of physical theory to experience, *i.e.*, of the mathematization of experience.

Great interest will also be shown in a book by a professor of philosophy on a subject not without its affinities to those with which the two writers we have just mentioned are occupied. Only, in this case, instead of going from the sciences to philosophy, the movement is from philosophy and the history of philosophy—from a study of Kant, to be precise—to contemporary science, as represented particularly by the theory of relativity. We refer to a mémoire crowned by the Institute (Academy of Moral and Political Sciences), on a subject set by the Academy, namely *Kant's Transcendental Æsthetic and Modern Science.*[13] M. Serrus, who received the prize, has shown, very much after the fashion of M. Bachelard, but from quite a different point of view, that although nothing remains standing of Kant's factual conclusions regarding space and time, critical idealism and its method still preserve their philosophical relevancy with respect to recent physical theories and in particular with respect to the theory of relativity.

Works devoted to psychology and published in 1929 have been relatively few in number. But some of them are of the very first rank. First of all ought to be mentioned a work on *La causalité physique chez l'enfant,*[14] by Jean Piajet, professor at the University of Geneva (with the collaboration of seventeen of his students and former students). This book is so rich in content that it breaks out of the moulds of traditional psychology. It affords a most useful contribution to the history and philosophy of the sciences. The chapter on the change of ideas in the child, from animism to mechanism, and from the subjective to the objective, which parallels this transformation, is particularly suggestive.

In the same collection (Library of Child Psychology and Pedagogy) has also appeared, this year, *La pratique des tests mentaux* [15] by Decroly and Buyse, with a preface by the learned professor of

[13] Alcan, Paris.
[14] Alcan, Paris.
[15] Alcan, Paris.

psychology at the Collège de France, Henri Piéron. It is exact, clear, and full of ideas.

Mention should also be made of *Le rôle de l'inconscient dans l'invention scientifique*,[16] by J. M. Montmasson, *La Psychoanalyse de l'art*,[17] by Ch. Baudouin, and *Réflexions sur le psychisme*,[18] which is essentially a study of the philosophy of biology, by R. Collin.

The great volume of work of high degree of excellence which we owe to M. Fr. Paulhan is well known. The book which he published in 1929, on *La double fonction du langage*,[19] does not detract from the high standard maintained by the group to which it is an addition.

On the one hand, a word supplies a 'meaning' to the mind.[20] It is thus the sign of a psychological reality. It evokes an image or a system of images (what is usually called a 'percept'), an idea or a system of ideas ('concept'), a feeling, an emotion, impressions; in brief, "an organization of different, unified facts". In this way we have a group of signs which serves as a basis for communication between minds, and in a certain measure gives to such minds a common nature.

But on the other hand—and this is the second essential function of language,—words take on an individual signification, and in virtue of this very fact in some sense represent spiritual creations, however turbulent they may be. A word, then, is no longer merely the sign of a reality, a common meaning which everybody grasps in analogous fashion, something necessarily abstract, general, and colorless. On the contrary, it becomes a pretext for inventing, for forming new ideas and original images. It causes us to experience unusual impressions, and this is the secret of the great writer, the great orator, the great poet. Language becomes, through the mediation of mental activity (no one more than M. Paulhan has insisted upon this irreducible activity), a creation of

[16] and [17] Alcan.

[18] Cahiers de philosophie de la nature, Vrin, (Paris). In the same collection a volume of *Mélanges* contains an article on "*Philosophie et science expérimentale*", by J. Maritain.

[19] Alcan, Paris.

[20] We see from this how much certain discussions which have occupied considerable attention in Anglo-Saxon circles could derive from M. Paulhan's ideas.

thought. "The mind repeats itself, continually repeats others; continuously also it introduces innovations and creates. This is a general fact, of which language presents us with the particular forms." [21]

Unlike psychology, the history of philosophy affords us in 1929 a rich yield of works, from the point of view either of quantity or of quality. In the first rank of these productions we may mention the continuation of the admirable work of M. Émile Bréhier, professor of the history of philosophy at the Sorbonne. Two years ago we referred to this work *à propos* of its first two sections. M. Lalande referred to those which followed, last year. 1929 has witnessed the publication of the first section (XVIIth Cent.) of the second volume, the subject of which is the history of modern philosophy. We shall not describe again the general characteristics of this *Histoire de la Philosophie;* [22] its condensation which detracts nothing from its lucidity; its factual richness cast into an harmonious unity wherein the sequence and the evolution of philosophical ideas appear in full clarity; an admirable work of synthesis. We recommend very particularly the chapters on Bacon and Descartes. Compare this last chapter, especially, with the four or five miserably inadequate pages on the same subject in a very well-known text-book—that of Weber! And although M. Bréhier's work possesses the usual features of a text-book—it is the best one now available—it is at the same time an original and profound work, deliberately brief though it is (in spite of the two large volumes it will compose), and more compact of thought than any we have so far found elsewhere.

Research devoted to the Middle Ages continues every year to yield certain eminent contributions to the history of the thought of that epoch, formerly barely known by a few specialists. On the subject of *L'idée de chrétienté chez les scolastiques du XIII siècle* (in the "Collection historique des grands philosophes", [23] authoritatively directed, as is known, by M. l'Abbé Piat), M. l'Abbé Bernard Landry presents us with the most original views, and the best documented and the most exact ones. The author is certainly among those who know most, because he has drawn his knowledge

[21] *Op. cit.*, p. 4.
[22] Alcan, Paris.
[23] Alcan, Paris.

from the original sources, about this formidable turbulence of ideas which was the Middle Ages in general, and the thirteenth century in particular. He is also certainly one of those who have the most original views on the history of ideas during this period —precisely because they are remarkably objective. Originality depends upon faithful and complete restitution, on the resurrection of movements of thought, up to the present time either disfigured by second—third . . . hand traditions or deprived of the proper perspective because of partisanship, so that even excellent analyses have remained locked up in the works themselves, without influence beyond.

We find once more exemplified, in *Introduction à l'étude de St. Augustin*,[24] the high qualities of exactitude, information and precision which we are accustomed to associate with the work of M. Gilson. We do not have to eulogize, in America where he teaches every year, the eminent specialist in Medieval Philosophy. Those who have thoroughly appreciated the exposition of the philosophies of St. Thomas and of St. Bonaventura will not be disappointed this time in seeking to familiarize themselves, through M. Gilson, with the most attractive figure among the great Doctors of Christianity, so vividly presented in the concluding chapter of the book. This conclusion establishes the very exact interpretation of the doctrine, at the same time that it sketches the essential traits of its creator's mind with great justice, —for until now we have hardly tried to comprehend this mind. No one, M. Gilson almost makes St. Augustine say, sees the Truth common to all, save in so far as it becomes the truth for his own thought. There is no objective truth that all can and ought to see from exactly the same angle, and with the same perspective. But each one ought in all sincerity to seek his own point of view and to indicate its perspective. St. Augustine has no desire to order and develop his theses in such a way that their explication and commentary would take the place of personal effort on the part of those who connect them with each other, meditate upon them, and seek in good faith to understand them. The mind of the student must keep ahead of the Master who instructs him. He must certainly apply himself to accurate understanding, since

[24] Vrin, Paris.

after all he has to do with eternal and universal truth, but he must understand it with his soul, *i.e.*, with what makes him peculiarly himself and different from all other men. To understand is to assimilate oneself to Truth, and not to lose oneself in it in a purely passive fashion. The intellect is active. St. Augustine desired only to put one in the way of research and meditation, to indicate the attitude one must adopt in order to discover by divine illumination the truths no one else can see for him. But there is more. If no one can attain the truth for another, *a fortiori* no one can attain beatitude for another. For beatitude, more than knowledge, is the aim of wisdom, of philosophy and of faith. Philosophy is not the science of what must be done; it does not teach blessedness, because it does not teach at all. Here again only the direction and attitude by which one *may* attain this beatitude can be indicated. Above all, no one will acquire it who does not seek and demand it with humility; placing himself before it with his own soul, and subsequently receiving it by 'grace'; exercising it; and reënforcing it with the ceaselessly renewed effort of a will liberated and attracted by this same grace.

At the antipodes from St. Augustine we have a thinker—very poorly known until now, in spite of an all too brief study by Boutroux—whom his historian correctly represents as advocating similar conceptions on methodology. Are these conceptions the outcome of an intellectualized mysticism, whatever be the nature or the source of this mysticism? M. Alexandre Koyré gives us a masterful exposition of *La philosophie de Jacob Boehme*,[25] and one which calls to mind the account rendered earlier by M. Delacroix of Master Eckhardt and his Mystic Way.

M. Koyré makes no pretence, he tells us, of tracing to the influence of his hero the origin and essence of German Romanticism and idealism. But he shows that the directing influences which dominated nineteenth-century Germany, from the termination of the epoch of the Illumination, and in violent and direct reaction against it, are at bottom essential tendencies of the German spirit. Romanticism and post-Kantian idealism reveal the most complete expansion of these tendencies. But they have developed and exaggerated them. We recall that É. Boutroux fre-

[25] Vrin, Paris.

quently loved to make similar remarks about Leibniz. In the case of Boehme they are still more exact and more manifest.

But what constitutes Boehme's historical importance is the fact that he implicitly represented this group of tendencies and gave them expression. Still more, he deliberately expressed them in such a way—and just here is where we find the analogy with St. Augustine—that his doctrine was intended to provoke, and must necessarily provoke, totally different echoes in different souls, determined individually and at the same time expressing both his own doctrine, or rather his own tendencies, and the souls themselves in which they had been awakened.

It is in virtue of the individual 'vocations' thus provoked, that Boehme changed the course of speculative German mysticism, and that he ought by rights to be assigned a place as an originator of one of the main currents of ideas of the European spirit, so far as this spirit finds German expression.

For us who maintain that philosophy has no other goal than to be an awakener of ideas, who see in French philosophy, always defiant when confronted with systems, a will to be nothing but that, it is comforting to find such a disposition at entirely different poles of the universe of thought—at the highest and most profound, the most vital and most original source of Christian philosophy on the one hand; and, on the other, at the source of this great and admirable German philosophy.

We may cite, also, as remarkable monographs which have appeared during the past year, the study on Gioberti by M. F. Palhoriès,[26] and that on *Le système d'Alexander*, by M. Devaux.[27] They both recommend themselves in virtue of their common quality of clarity, brought to bear on thoughts which are not always, in spite of their intrinsic precision, easy to make others understand.

The publishing house of Rieder et Cie. (Paris) is editing two collections which without directly dealing with the history of philosophy closely touch it, because they are both devoted to the history of religion—more precisely to the history and philosophy of religion. They have already been mentioned, if I remember

[26] Alcan, Paris. Collection des grands philosophes.

[27] Vrin, Paris.

correctly, in this annual review. They bear as general titles, respectively, "*Judaïsme*" and "*Christianisme*". In these two collections the following quite remarkable works have recently appeared:

(1) In "*Christianisme*":
Foi et science au Moyen-Age, by Félix Sartiaux;
Milton et le matérialisme chrétien en Angleterre, by Denis Saurat;
Catéchisme pour adultes, (I, *les dogmes*) by Louis Coulange;
Les morales de l'évangile, by Albert Bayet;
Le modernisme catholique, by Ernesto Buonaiuti (tr. Monnot);
Auguste Comte et le catholicisme, by Charles de Rouvre.

(2) In "*Judaïsme*":
Une vie humaine, by Uriel da Costa (tr. Duff et Kaan):
Le livre du Zohar, tr. from the Chaldaic by Jean de Pauly;
Le sanctuaire inconnu, by Aimé Pallière;
Le fumier de Job, by Bernard Lazare (new edition);
Valeurs permanentes du Judaïsme, by Israel Abrahams.

ABEL REY

THE SORBONNE

CONTEMPORARY GERMAN PHILOSOPHY*

IT is well known that to make a just and illuminating division of philosophy is one of the most difficult problems in philosophical systematizing. This difficulty naturally reappears as soon as we undertake to make a clear division of philosophical literature. It does not merely reappear, however, but grows in proportion as the number of these works grows;—which is what is happening here in Germany to an unusually great extent. It would need a special and comprehensive enquiry to determine the reasons for this striking richness of our philosophical production. For some time the need for philosophy has been felt here with special force; and practically innumerable persons, experts and incompetents, outstanding specialists and hopeless dilettanti and laymen, systematizers and men of mood, rationalists and irrationalists, are at work to satisfy it. At the same time our publishers universally complain of the smallness of sales. This indicates, however, not so much indifference on the part of the public as an excessively large supply, a superabundant mass of philosophical literature, which makes one book a rival of the other for a place in the sun.

Not merely the discovery of a proper division, but also the selection of material, is a difficult thing in this welter of literature. It is inevitable that some valuable book may fail to receive the consideration it deserves. Even the best will has its limits, and the individual's powers of comprehension are unfortunately not always adequate to the mass of the matter that is actually offered. The researcher and scholar often has a bad conscience, because in many cases it is impossible to become accurately acquainted with the contemporary literature even of a single field, so great is the rush of new works. Thus every review will inevitably suffer from incompleteness and from a certain onesidedness.

For the purposes of this article we shall follow a simple and more or less traditional division, collecting together in one group the *historical* and in another the *systematic* works.

* Translated by Richard Robinson.

I

Before considering some *historical* works, we must notice an important fact. Although our interest in the history of culture and of philosophy has not grown less (as it might have been expected to do, owing to the increase of the interest in system), the *method* of the historical research of our time has changed in a fundamental way. And it is the increasing tendency towards system that has had the greatest influence in this respect, for even books whose contents are *historical* are now being written, not from an evolutionary or biographical, but from a *systematic*, point of view. This is in fact the formal characteristic of German historical research in its entirety. Uniformity in the choice and application of a suitable system is naturally not attained. On the contrary, research follows a considerable number of directions differing according to the numerous systems that are now reappearing in Germany. In other words, it is being prosecuted from the standpoint of a particular school of philosophy or of a particular *Weltanschauung* or view of life.

This is most interestingly illustrated by the treatment of ancient classical philosophy, remarkable influence on which has been exercised by the so-called school of Stefan George. Stefan George is one of our greatest lyric poets. His lyric is one of *Weltanschauung* rather than of mood. He is inspired by the formative power of the Greek spirit, and especially of the Platonic, so that a humanistic and classical air breathes through his poems. By his emphatic demand for *form*, *metron*, *norm*, he becomes one of the revivers of humanism. This has made it possible for a large group of passionately enthusiastic followers to gather around him, for a Stefan-George circle to arise, and for him with his circle to become a power in all the realms of the mind. This movement combines artistic traits with others of a philosophical and religious nature. It is no wonder that George and his admirers have found their symbol in that person of antiquity in whom all these tendencies are embodied in unique perfection, namely Plato, who was also, as we know, philosopher, artist, priest and teacher in one. His importance as a symbol is forcibly brought out in *Platon und der George-Kreis*, a little book of fine feeling by Franz Josef Brecht.[1] The justification of his picture of Plato does not

[1] Leipzig, Dieterichsche Verlagsbuchhandlung.

lie in philological accuracy, but rather primarily in its worth as a *Weltanschauung* and as an educative influence. He seeks to help in the creation of a new form of life, the necessity of which we in Germany feel very keenly. We experience once again the need for spiritual leadership; and Plato's greatness as a spiritual leader has shown itself convincingly not merely in the present but also on a hundred occasions in the history of civilization. Would the West be anything at all without him? Karl Gronau, professor of philosophy at the Technische Hochschule in Braunschweig, has examined this immense influence in his little book, *Platons Ideenlehre im Wandel der Zeit*.[2] He depicts the part that the doctrine of forms played in shaping the thought of the middle ages and of the Renaissance. He shows Plato's influence on Kant and Fichte, on Schiller and Goethe, on Schopenhauer and the romantic movement.

The revival of Plato that is taking place among us arises out of the need for a change in *Weltanschauung*. We want a new humanism, and we realise the decisive share that Plato had in the humanistic formation of ancient culture. Werner Jaeger, the representative of classical philology at the university of Berlin, is among those who call for the creation of a new humanism capable of giving the needed spiritual shape to our formless age. In his fascinating book, *Platos Stellung im Aufbau der griechischen Bildung*,[3] he depicts Plato as the founder of such a humanism and its permanent representative. It was he whose great pedagogical work revealed the ideal of humanity, and who gave us the feeling for that true education through which the Greeks have become the teachers of the western world. A similar interpretation of the Platonic philosophy is given by Paul Friedländer, the philologist at the university of Marburg, in his profound and penetrating work, *Platon*.[4] At first man merely exists. He does not ripen to real manhood until the beauty of the Form has been impressed on his soul; for only from and through the Form does the soul obtain her education. Plato reveals to us the world of the eternal Forms, in order to fulfil his pedagogical purpose thereby. The

[2] Braunschweig, Verlag Georg Westermann.

[3] Berlin, Walter de Gruyter & Co.

[4] Berlin, Walter de Gruyter & Co.

necessity and holiness of such exemplary Forms of existence was made clear to him by the life and death of his master Socrates. Friedländer indicates the path of spiritual purification which according to Plato the soul traverses in her ascent from the sensible to the ethical, and which the Greek thinker describes in his doctrine of Forms. Another impressive account of Plato's importance as leader and teacher is the excellent book, *Platon der Erzieher*, by the Kiel philosopher Julius Stenzel.[5] Plato did not develop his philosophy in order to present a grey theory far removed from life. On the contrary, he combines intellectual depth with resolute educative power. Thus the wise man of Greece became the leader not merely of his people but of the whole of European humanity, and of all who share in western culture. There are two distinct respects, Stenzel tells us, in which we can still learn from Plato to-day. His example and his philosophy are a repudiation of the onesidedness both of intellectualism and of the individualism that seeks to deny or to remove the bonds of community. Stenzel unfolds the mighty picture of the Platonic philosophy from this point of view, and his book illuminates the incomparable educative power of Platonism and the ancient classical idealism.

Without Greek idealism the great movement of German idealism is inconceivable. Hence along with the revival of the Greek spirit there goes a revival of German idealism, which, in view of our modern philosophical aims, necessarily links up with Hegel. In his magnificent book, *Die Philosophie des deutschen Idealismus, 2. Teil, Hegel*,[6] Nicolai Hartmann, professor of philosophy in the University of Cologne, shows that at the present time we are confronted with the same problems as was Hegel. He devotes himself with complete success to the understanding of one of the deepest minds of all time, whose ideas are now inevitably returning to currency one after the other. He teaches us to know Hegel as the originator of all true comprehension and evaluation of the general history of culture and philosophy; and so the great philosopher of history is himself understood from the point of view of the philosophy of history. While this work of Hart-

[5] Leipzig, Felix Meiner.

[6] Berlin, Walter de Gruyter & Co.

mann's leads us directly into Hegel's philosophical speculation, another work on the same thinker begins by clearing up the historical conditions of his system, whether philosophical or general. This is *Hegel, 1. Band, Die Voraussetzungen der Hegelschen Philosophie*, a very full presentation. The author is Hermann Glockner, Privatdozent in philosophy in the University of Heidelberg.[7] He shows that all European thought and the whole *Weltanschauung* of Germanic Christendom must be reckoned as such conditions. He paints Hegel's personality at full length, including his manner of speech and writing, and the outer and inner circumstances that determined his thought. We learn that even in concrete studies he was one of the most cultivated men of a time that did not lack richly cultivated personalities. Not merely was he an outstanding student of history; he also embraced the realms of mathematics and natural science, and indeed the whole breadth of human culture. Glockner convinces us that our philosopher was both a very great mind and a man of deep feeling, with an intimate understanding of art.

One of his most important forerunners was the Italian philosopher Vico, to whom we owe the first inspired steps towards the philosophical study of history and, so, towards the philosophy thereof. His tranquil monument stands in the Public Garden at Naples, surrounded by the roar of the huge traffic of a modern city. Which of the hurrying passers-by is aware of the pioneer learning of the Neapolitan thinker commemorated there? Nevertheless, we have a new treatment of his philosophy from such an outstanding representative of contemporary Italian intellectual life as Benedetto Croce.[8] Vico's attention is mainly directed to the historical development of mankind, which he seeks to recognize in its peculiarity, rejecting entirely the scientific point of view. Living from 1668 to 1744, he is naturally not free from theological and medieval conceptions; nevertheless he strives to get such an understanding of man's historical existence as criticism and experience can confirm, and hence he directs his attention to the foundations of human society. We ought to be very grateful to Benedetto Croce for giving us such a clear and instructive picture of the lifework of his great countryman.

[7] Stuttgart, Fr. Frommann.

[8] *Die Philosophie Giambattista Vicos*, Tübingen, J. C. G. Mohr.

Almost all the philosophers of the past are benefiting by the breadth of our historical enquiries. Among those who are enjoying an increasing measure of study is Spinoza. This interest in the solitary Dutch thinker is no accident; it is connected with the general rise of interest in the new realism that is now beginning to develop. Spinoza's life and philosophical achievement are described in detail in two outstanding works, J. Freudenthal's *Spinoza, Leben und Lehre*,[9] and Wilhelm Bolin's *Spinoza, Zeit-Leben-Werk*.[10] Both of these works have been revised by Carl Gebhardt. Bolin gives a delightfully vivid picture of Spinoza's existence and of the whole environment in which it was framed. Freudenthal's book is the standard work among all the newer expositions of Spinoza. The terribly worn-out expression 'standard work' is here fully justifiable. It is matter for satisfaction that the new edition has been entrusted to Carl Gebhardt, because he has proved his scholarship as editor of the Heidelberg Academy's edition of Spinoza, which is now the sole authoritative one.

One of the most important moments in the development of the newer philosophy and the intellectual life of the west is the step from Spinoza to Leibniz. The tremendous wealth of the latter's philosophy is systematically depicted in *Leibniz*, by Alfred Brunswig, late professor of philosophy at the University of Münster.[11] Brunswig depicts Leibniz's activity with attractive vividness. He was wholly immersed in public affairs, and influenced all the schemes of the time. He differs very decidedly from the quiet and somewhat static Spinoza, both in his life and in the astonishing mobility of his mind.

Leibniz was the chief representative of the rationalist philosophy, which characterized the whole of the so-called Enlightenment. Against this spirit there arose in the second half of the eighteenth century an opposition that reached its most powerful expression in the movement called the "Storm and Stress". One of its characteristic advocates was Lavater (1741–1801), who was entirely imbued with the irrationalist spirit. His personality, which was completely anchored in the religious life, is described

[9] Heidelberg, Karl Winter.

[10] Wittenberg, Bezirk Halle, A. Ziemsen.

[11] Vienna and Leipzig, Verlag Karl König.

in Christian Janentsky's fine little book, *Johann Caspar Lavater*.[12] His best-known work, *Physiognomische Fragmente*, makes it clear that his habit of thought was wholly theological and emotional. He lost himself almost entirely in the mysticism of emotion, and for that reason never attained to a truly philosophical clarification and fixation of his ideas. It was quite otherwise with Schleiermacher, who was not merely a great philosopher of religion, but also closely related to real, concrete, historical life, which he strongly influenced. This appears from the study, *Schleiermacher in der Geschichte der Staatsidee und des Nationalbewusstseins*,[13] by Ernest Müsebeck, director of our national record-office at Potsdam, who has often come forward with excellent historical enquiries. Müsebeck emphasizes the strong political interest that led the famous author of the *Reden über die Religion* to a permanent concern with the problem of the state. As a teacher at the University of Berlin Schleiermacher lectured on the theory of the state before large audiences. Thus he is one of the founders of the consciousness of nationalism in Germany, a nationalism, however, free from chauvinistic narrowness.

The so-called wars of liberation against Napoleon were marked in Germany by a series of far-reaching reforms in politics and law. On the originators and promoters of these movements a particularly strong influence was exerted by Kant's doctrine of the state. In his valuable book, *Kant als Politiker, Zur Staats- und Gesellschaftslehre des Kritizismus*,[14] Kurt Borries shows that this doctrine arose out of the Kantian philosophy by an inherent necessity. Holding that it is the duty of every educated man "to make public use of his reason in every particular", Kant turned his attention to the state and its rights, and developed a decidedly normative doctrine. Especially worth notice are Borries's remarks on "Nationalism, reasons of state, and the ideal of the league of nations".

To followers of the Kantian philosophy it is a very great pleasure to note how strong the interest in its creator still is, in spite of all assertions to the contrary. Even from the merely quantitative point of view, the number of books devoted to Kant out-

[12] Frauenfeld and Leipzig, Huber & Co.

[13] Berlin, Reimar Hobbing.

[14] Leipzig, Felix Meiner.

weighs those devoted to any other philosopher. Moreover, the direction of our development continually leads us to new interpretations of him. Such is Martin Heidegger's powerful book, *Kant und das Problem der Metaphysik*.[15] By his work *Sein und Zeit* Heidegger entered the front rank of the thinkers of our time. This book on Kant is certain to arouse an equally lively discussion, for he emphatically denies the usual view, according to which the great critical thinker was fundamentally nothing more than an epistemologist of genius. On his view the central point of Kantian thought really lies in the problem of the nature of man, and especially of the man who tries to break through the limits of human knowledge. For, as Kant continually felt and taught according to Heidegger, it is the essence of man to extend his questioning beyond the finite, and enquire with a unique boldness into the nature of the Absolute. On the other hand, however, Kant insists on the fact that this question cannot be answered. Then how is metaphysics possible? This problem is very closely connected with the deepest problem of philosophy, namely, What is man? It is precisely because we are only finite beings and possess only a finite reason that we long for the Absolute and cannot be satisfied. An infinite intuition, such as we ascribe to God, does not have to put questions. Thus Kant comes to have a tragical and problematical relation to metaphysics. But his aim is, according to Heidegger, precisely to work out this relation. He wishes to exhibit the problems of metaphysics *as* problems, and he always considers this task higher than any search for solutions. Metaphysics for him is just one great dialectic, and hence his relation to it is also dialectical.

Through this dialectical conception of metaphysics Kant belongs to the dialectical philosophy of our day, and in it his importance for us becomes clear. How great that is, is shown by Reinhard Kynast's *Kant, sein System als Theorie des Kulturbewusstseins*.[16] He makes it plain that the world of history is the world of values, and he then goes on to show that Kant's system was the first to unite this world of values into a complete whole. He achieved this unification by exhibiting the ethical power of

[15] Bonn, Friedrich Cohen.

[16] Munich, Ernst Reinhardt.

reason as at once the foundation and the culmination of culture. The ethical reason is the most fundamental of all values, and the philosopher, using it as an absolute starting-point, constructs and interprets the totality of the phenomena of life therefrom. Now the problem of value is central to the philosophical work of the present day, and according to Kynast this whole present-day philosophy of values has its starting-point and foundation in that of Kant. His stimulating book shows convincingly that Kant was not a mere critic of knowledge, but also gave us a philosophy of culture and of life that is still of undiminished importance.

Kant shows traits of close kinship with Socrates, who also had an unusual influence after his death. This influence is discussed in Benno Böhm's remarkably interesting book, *Sokrates im 18. Jahrhundert.*[17] Socrates lived and worked not merely in the streets of Athens. He still walks to-day through the streets of our souls. No one who has once made his acquaintance ever succeeds in forgetting him. His influence on the Enlightenment was of decisive importance; and since we are to-day still most deeply indebted to that age Socrates is still a living force. Böhm depicts him as the representative of the eighteenth-century attitude towards life, as opposed to the earlier culture, which was built on the church. There is an irreconcilable contradiction between Christianity and modern scientific rationalism. In the contest resulting from this contradiction the decisive rôle falls to Socrates, as the classic rationalist. Without this rationalism there can be no free science and no independent philosophy and thought. The *Preussische Akademie der Wissenschaften* was fully justified in giving Böhm a considerable prize for his work.

The range of our interest in historical research includes also foreign philosophy, to which we should pay attention, if for no other reason, merely in order to become acquainted with the intellectual traits of other peoples and lands. We have an outstanding foundation for the satisfaction of this interest in *Die Philosophie des Auslandes*, which has been brought out by Traugott Konstantin Oesterreich with the aid of a number of eminent scholars in foreign countries.[18] This is the fifth volume of the

[17] Leipzig, Quelle und Meyer.

[18] Berlin, E. S. Mittler & Sohn.

excellent *Grundriss der Geschichte der Philosophie*, which we call "Ueberweg" for short, after the name of its original editor. The present volume gives a glimpse of the reciprocation that everlastingly obtains between all nations with any pretensions to culture. We hear of the large part played by German philosophy, and especially that of Kant and Hegel, in this intellectual web. But in his Introduction Oesterreich also traces and emphasizes the growing process of national secession, which since the beginning of the second half of the nineteenth century has been gaining more and more ground in the realm of philosophy as elsewhere. Those, however, who believe in the community of nations and the necessity for solidarity between them, will see a comforting sign in the fact that the fulfilment of national secessions does not impair the connexion of minds with each other. It is true that within these national cultures there have formed characteristically national systems of philosophy and nationally tinged views of the world. Nevertheless, the differences are not so great that the inner unity of the general philosophical attitude of mind has been lost thereby. And perhaps not the least important lesson that we receive from this *Philosophie des Auslandes* is that all of us together are serving the one eternal truth, and can only serve it in and by means of the overruling unity of the mind and the community of minds.

We may bring this review of historical literature to a close with a notice of a German philosopher who has set the scene of his activity in foreign lands, namely Albert Schweitzer. Oskar Kraus, professor of philosophy at the University of Prague, has raised an important and worthy memorial to him in his book, *Albert Schweitzer, Sein Werk und seine Weltanschauung*.[19] Schweitzer is a positively entrancing personality, whose intellectual interests and practical activities extend to the most various sides of human culture. By training he is a theologian and a philosopher; but he is also a musician, for he has written a magnificent work on Bach, which has appeared in three languages, and he gives organ-concerts with great success. He used the money that he obtained in this way to help the sick negroes on the equator

[19] Berlin, Pan-Verlag G.m.b.H. Kurt Metzner.

by building them a hospital in the forest. Thus he did not stop at theory, but fulfilled the ethical obligation to let the helpless negroes have as much share as possible in our huge wealth of curative devices. At the risk of his life he has given himself to the service of his neighbors. He has answered the call that he expresses in the words: "Physicians must go out as commissioners of the nations of culture to bring about among the unfortunate in far countries that which must be brought about in the name of the culture of man". Kraus's book tells us, in the most engrossing way, not merely about the life and character of this unusual man, but also about his philosophy, and his ethical and metaphysical optimism.

II

Those contemporary works whose character is *systematic* may justifiably be classed either as idealist or as realist. The idealist ones naturally continue the tradition of the Platonic philosophy and the classical German idealism, while our realism is a sort of renewal of Aristotelianism and the philosophy of St. Thomas. It seems that we have in these two standpoints two great opposing groups or parties, so that in Germany, as in other places, contemporary philosophy is repeating the classical dualism that stretches throughout philosophy's history.

Among the works of idealist tendency is Hermann Friedmann's *Die Welt der Formen: System eines morphologischen Idealismus*.[20] Closely connected with this, as its commentary and continuation, is *Der morphologische Idealismus, seine Grundlage und seine Bedeutung*, by Friedrich Kuntze, formerly professor at the University of Berlin.[21] The idealist interpretation that Friedmann and Kuntze give of the world has its ancestors in Plato and Goethe—the philosopher who looked at the world with the eyes of a poet, and the poet who so often looked at it with the eyes of a philosopher—, for what they are concerned with is an idealistic *Wesensschau* or contemplation of reality. Now what is the meaning of this idealist theory? Friedmann depicts two fundamental attitudes of man to reality, and two corresponding ways of regarding the

[20] Munich, C. H. Beck'sche Verlagsbuchhandlung. Second edition, revised and enlarged.

[21] Munich, C. H. Beck'sche Verlagsbuchhandlung.

world of appearances, which he expresses by the contrasted pair "haptic-optic". A haptic thinker (the word comes from the Greek ἅπτειν, to touch) is mechanical and limited. He moves predominantly in the sphere of measurement and calculation. Only that which can be counted is real for him, and only in so far as it can be counted. This specifically 'scientific' or mathematical and rationalist attitude gives rise to certain general ways of acting, views of life, and institutions; gives rise, in other words, to a comparatively restricted or mechanical mode of conduct, to a more commonsense way of dealing with and evaluating man and the world. Wholly different is the optic attitude, whose cause Friedmann espouses with the consciousness of fundamental kinship thereto. Optic is the *Weltanschauung* that is not conceptually limited and does not convert itself into conceptions, but uses the eye, the insight, and the freedom of the mind. In the pregnant experience of contemplation it creates the great forms of unity. It does not work with a footrule; it does not cling to the details with cautious and painstaking pettiness, but considers them unimportant. It starts from the highest general intuitions, which he calls "*Grundgebilde*" or "fundamental shapes". For a good example we may mention Wölfflin's magnificent book, *Kunstgeschichtliche Grundbegriffe*, which rests entirely upon optic contemplation. Friedmann's view is related to Bergson's doctrine of intuition and to Spengler's morphological interpretation of history. His synthetical habit of mind is a welcome contribution to the much needed revival of our classical philosophy, especially that of Schelling and Hegel, which is already beginning to make headway. At the same time it will favor the new interest in Goethe's philosophy of nature, which as we know is also of a 'morphological' character. Perhaps the best evidence of the importance of Friedmann's work lies in its power to encourage a definitely philosophical and 'synthetical' way of thinking, which is so necessary to our time, and to strengthen and justify it. Coming as it does from a genuinely philosophical mind, capable of constructive and speculative views, it will have a propitious influence on the new philosophical movement that is arising on all sides.

We may now give a brief glance at what is perhaps the most

brilliant representation of the idealist view of reality, namely *Philosophie der symbolischen Formen*, by the outstanding philosopher Ernst Cassirer. Up to the present time three volumes of this work have appeared: Part I, Speech; Part II, Mythical Thought; Part III, Phenomenology of Knowledge.[22] The plan of this magnificent undertaking calls for a general theory of the forms of spiritual expression. One by one all the fundamental forms of the spirit are being drawn into the sphere of the enquiry, which is gradually becoming a general phenomenology of the spirit. It already invites comparison with Hegel's work on the same subject. A difference, however, naturally appears at once. The development of knowledge in the time since Hegel has put us in possession of a tremendous wealth of detailed information, so that to-day we have an insight into the mass of the particular realms of culture quite different from what he could have. Cassirer is working over this new-won profusion with astonishing sureness. In method he follows his master Kant. That is to say, he aims at discovering the fundamental conditions, the "transcendental principles", that have constitutive importance in each realm of culture. By thus following the critical or transcendental method in his researches, and convincingly displaying its fruitfulness in the study of the most varied departments of culture, he confirms our previous assertion that Kant's philosophy is still thoroughly alive to-day. His book is so impressive that I should like to spend longer on it. I am afraid, however, that this would make my article too extensive; to avoid which, let us turn to some works belonging to realistic philosophy.

The *realist* treatment is being applied to two great groups of problems, theology and anthropology. In each sphere men seek either to get their hands on the particular reality concerned, or to give it a philosophical basis. Through a misunderstanding of dealism they suppose that it fails to recognize, or inclines to destroy, the reality of the faith and of man. The strictest upholder of theological and philosophical realism is Friedrich Gogarten, three of whose works may be mentioned here: *Ich glaube an den dreieinigen Gott, Eine Untersuchung über Glauben und Geschichte; Glaube und Wirklichkeit;* and *Die Schuld der Kirche*

[22] Berlin, Bruno Cassirer.

gegen die Welt.[23] He fears and passionately rejects the intellectualization of religion into a theoretical attitude of mind. According to him religion rests on an unshakable faith in divine revelation, which in turn involves a particular temporal occurrence; and this occurrence forms the content of the Christian doctrine of redemption. Religious truth cannot be grasped by the understanding, or by any philosophical reflexion whatever, but only through faithful listening and obeying. Philosophical idealism, he declares, makes the ego or selfconsciousness of man the centre of the universe. Unless we abandon this godless self-glorification we shall come to spiritual and religious ruin. The idealistic explanation of the autonomy of freedom and of consciousness is a typical example of disbelief and overweening pride. The church, he goes on, has just as little to do with the actual regulation of men's relations as it has with philosophy. What makes the church the church is the Protestant faith and obedience to the word of God. Nothing but the recovery of that faith can lead to the reconsecration of life.

Gogarten often sounds like a preacher preaching repentance in order to bring back the uncompromising Chrisitan faith to a world that has become all too worldly. But the man who has been especially influential in restoring the Eros for religion to life among us is the great Dane Sören Kierkegaard. In the present trend towards religious revival, it is natural and right that this profound and passionately upright fighter should come forward out of the oblivion in which he was, that his name should be on thousands of lips, and that his writings should obtain a great following. In *Sören Kierkegaard, der christliche Denker und sein Werk*,[24] Walter Ruttenbeck gives us an account, supported by ripe science, of the man and the historical relations of his thought. He is extremely instructive in his exposition of Kierkegaard's powerful influence on the theology of the nineteenth century and the present. Kierkegaard himself speaks to us as a preacher in *Christliche Reden*.[25] He is a believer of fiery zeal, a warm opponent of all intellectualism, a religious romantic, a man with no peace but

[23] All three published in Jena by Eugen Diederichs.

[24] Berlin, Trowitsch & Sohn.

[25] Jena, Eugen Diederichs.

with an infinite longing for it, and a spiritual relative of the great Swede Strindberg.

Along this road of opposition to rationalism proceeds the philosophical anthropology and anthropological philosophy of history that is now arising among us. A number of thinkers consider that the present mental crisis is mostly due to this intellectualization of our hearts and minds. I myself have called attention to the connexion here both in my *Die geistige Krisis der Gegenwart*,[26] which appeared several years ago, and in *Zur Kritik der Gegenwart*.[27] In his book, *Der europäische Geist*,[28] the gifted Leopold Ziegler sketches with impressive candor the origin and significance of this acute intensification of our intellectual life. Through increasing rationalization, he says, we have arrived at an ominous godlessness and unchristianity. This intellectualization cannot be stopped, but on the other hand we need not and ought not to stifle in ourselves the mystical and mythical forces of primeval times. He asks whether, if Europe became godly again, it would become Christian again at the same time, and this is a very serious question. He entertains grave doubt whether we still have sufficient force left to return to the religious springs of existence.

We in Europe have become confused about the notion of man and humanity, and we hardly know any longer what our place and purpose in the world may be. The only thing that we are certain of is that we are going through a profound intellectual crisis. In order to overcome it we must risk the attempt to know ourselves. 'What is man, and what is his place in the world?' These are the questions that occupied the many-sided and wide-ranging Max Scheler during the last years of his fruitful work. Of this work we may mention the following: *Die Stellung des Menschen im Kosmos*,[29] *Mensch und Geschichte*,[30] and *Philosophische Weltanschauung*.[31] He finds the main direction of human evolution in the enormous intensification of man's self-consciousness. Man appears to himself as a little God. Scheler goes on

[26] Berlin, Pan-Verlag Kurt Metzner G.m.b.H. Now in its third edition.
[27] Langensalza, Hermann Beyer & Söhne.
[28] Darmstadt, Otto Reichl.
[29] Darmstadt, Otto Reichl.
[30] Zürich, die Neue Schweizer Rundschau.
[31] Bonn, Friedrich Cohen.

to describe the stages and types of this evolution. In the course of time these types have hardened into fixed ideologies. It is by means of them that we study history, orient ourselves in life, and judge man and his creations. They are the objectification of man's belief in himself, and he uses them as theoretical and technical means of orienting himself in life and for life.

Let us glance over the whole of our philosophical literature for an instant. Undoubtedly we detect a strong new life in it. What is the fundamental reason for that? The times when philosophy is inspired with a new spirit are always the times when man has again become a problem to himself, and human life in its totality has entered the field of enquiry. It is because we are once more asking about man and his nature and meaning that this new life has come into philosophy. The modern philosophical anthropology draws its strength from this revival of interest in the problem of man.

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THE PARADOX OF THE TIME-RETARDING JOURNEY
(I)

NUMEROUS physicists and other men of science of high authority have set forth as clear and indubitable deductions from the Special Theory of Relativity certain paradoxes which turn upon an interpretation of the meaning to be assigned in that theory to the Fitzgerald-Lorentz contractions and retardations.[1] The more striking of these paradoxes have to do with the effects upon a hypothetical traveller of relative motion at any extremely great velocity. These deductions have been expressed in a variety of forms, all embodying the same principle. The most piquant of them may be called the Paradox of the Time-Retarding Journey. Though this pleasing relativistic *Märchen* is an oft-told tale, it is necessary for our purpose to repeat it here.

Once upon a proper time there were—or let us rather say, in the indefinite present, 'there are', since, after all, these events have not yet really happened—twin brothers, Peter and Paul. Peter is a home-keeping youth, but Paul has the soul of an adventurer and busies himself with the construction of a machine for flying through space at an enormous speed. When he and Peter are twenty years of age he completes this contrivance and sets forth upon his journey. Attaining almost at once a velocity amounting to a large fraction of that of light, he continues his celestial joy-ride at a uniform velocity, moving always in a straight line. At the end of a year, as shown by the clocks he has carried with him, he is able to reverse his motion and return to the earth at the same speed. Landing in his home-town, he discovers that in it decades

[1] *E.g.*, Einstein, "Die Relativitätstheorie", in VIERTELJAHRSSCHR. D. NATURFORSCH. GESELLSCHAFT IN ZÜRICH, 1911, Jahrg. 56, p. 12 (quoted in Gawronsky, *Der physikalische Gehalt der speziellen Relativitätstheorie*, 1925, p. 30); *cf.* also "Dialog über Einwände gegen die Relativitätstheorie" in DIE NATURWISSENSCHAFTEN, VI, 1918, pp. 697 ff.; Eddington, *Space, Time and Gravitation*, 1921, p. 26; *The Nature of the Physical World*, p. 39; J. Becquerel, *Exposé élémentaire de la théorie d'Einstein*, 1922, p. 58; Max Born, *Die Relativitätstheorie Einsteins*, 1922, p. 194; Birkhoff, *Origin, Nature and Influence of Relativity*, 1925, p. 103; G. N Lewis, *The Anatomy of Science*, 1926, pp. 24–7.

have passed and that his stay-at-home twin is now far older than himself. Nor would this be a conventional difference of calendars, a mere matter of bookkeeping. Paul will—such, in a relativistic universe, we are told, are the hygienic benefits of a fast life—be *physiologically* younger than Peter; indeed, if his speed was less by only 1/20000 than that of light, he will, returning as a youth of twenty-two, find that 200 years have elapsed on the earth, and consequently that his twin brother has long since died of the infirmities of age. For not only the clocks—in the colloquial sense of the term—which Paul has carried on his voyage, but all his physical processes, the motions of the atoms composing his body, will have been retarded in proportion to the rapidity of his flight, while no such effect will have been experienced by Peter. "In truth, a marvellous conclusion", says Max Born, "but one which no quibbling can escape. We must simply adjust ourselves to it as, some centuries ago, our ancestors adjusted themselves to the idea of men standing on their heads at the antipodes."[2] This "spectacular consequence of the Special Theory", says Gilbert Lewis, "has now been accepted into orthodox physics"; it is, indeed, "simply a more startling form" of the conclusion "that there is no absolute measure of the flow of time".[3] In short, we are given to understand, it is a part of the established body of scientific truth that—though it happens to be as yet technologically impracticable for Paul to make the flight in question—if he did make it the result indicated would be literally predictable; he would, in proportion to the speed and duration of his journey, become younger than his brother born on the same day. The retardation which Paul's time underwent would confer upon him, it is true, only a somewhat equivocal benefit; as André Metz has put it: "The traveller has really lived only two years; he therefore has, from this point of view, no superiority over other men. If his stomach allows him to take only two meals a day, it is $2 \times 2 \times 365$ meals that he will have been able to take in his projectile, and not $2 \times 200 \times 365$. If he is an author accustomed to write a book every six months, he will have written four books, not four hundred, . . . for his

[2] *Die Relativitätstheorie* (1922), p. 194.

[3] *Anatomy of Science*, pp. 124–7.

literary production is also equivalent to a clock! The only advantage (if it is one) which M. Paul will have will be that of finding himself [on his return] in the midst of his great-great-grandchildren." [4]

Now the difficulty with this conclusion is not, as writers on relativity usually appear to suppose, that it is, as thus far stated, extraordinarily paradoxical from the point of view of common sense. After all, what is supposed to have happened to Paul is, when expressed in concrete empirical terms, of a not wholly unfamiliar sort. First, the interval between his departure and his return has, as the phrase goes, 'passed more rapidly for him' than for those at home; it has subjectively 'seemed shorter' to him than to them. And, as the basis for this, his physiological functions have been retarded in the sense that fewer of all of them have occurred during the interval. But that the period between two events may have a very different subjective duration for two persons—say the period between the beginning and end of a philosophical lecture for the lecturer and for his audience—is not a new discovery; nor is it contrary to familiar analogies that a difference in physical conditions should make a difference in the mode or rate of occurrence of physiological processes. True, the difference in the effect is in this case supposed to be very great, and to be due to a physical condition—namely, relative velocity—which has not usually been believed to have effects of the sort in question. But the difference in the conditions is also supposed to be very great; and there is, to common sense, no obvious reason why velocity should *not* be a factor affecting senescence. True, again, that for Paul the actual number of units of time, as measured by his chronometers, would, according to the argument, be fewer than for persons remaining on the earth, and counting time by their chronometers, which, before Paul set out, were synchronous with his. But the variations of chronometers with varying conditions are likewise not wholly foreign to ordinary experience; and though, once more, unaccelerated relative motion has not commonly been assumed as one of the causes of such variations, Paul, when he empirically discovered (as in the usual version of the tale he is supposed eventually to do) that such

[4] *La relativité*, p. 26 n.

motion has an effect on clocks, might simply conclude that not all the causes of variation had previously been recognized by the watchmakers. The congruence with one another, during the voyage, of *all* these usual indicia of time-lapse, within Paul's own moving system, would, no doubt, lead him (if uninstructed in the theory of relativity) to attribute a sort of absoluteness to the time thus indicated, and he would therefore feel a natural surprise on learning that in no respect had time-measurements on the earth kept in accord with his. Yet even this would not amount to a contradiction—not even if Paul retained a prejudice in favor of Newtonian time; and he could therefore, with no excessive difficulty, accommodate his mind to the conception.

It is true that if we carry out certain further deductions from the same premises some rather striking consequences follow. If, for example, the voyager, instead of returning, travelled continuously with the speed of light, no time would elapse for him at all; he would be, in a sense, immortal, but it would be an immortality in which nothing happened, and therefore somewhat difficult to distinguish from death. But we are here concerned only with the supposition that his speed is less than that of light, which in any case, according to the theory, it always must be. And so long as we confine ourselves to this case, the real, or at least the major, paradox does not appear until we note a further implication of the Special Theory which most narrators of the tale of Peter and Paul omit. That theory is primarily a rigorous generalization of the principle of the relativity of motion; if the latter be false, the former cannot be true. And this principle asserts that the unaccelerated motion between any two systems is reciprocal, and therefore that if there *were* any modifications in durations and linear magnitudes *attributable solely to such motion*, these must affect both systems. It is, then, on relativistic principles just as true to say that the earth, and therewith Peter, has been moving away from Paul, as to say that Paul has been moving away from Peter. Hence the conclusions previously drawn for Peter must now be drawn for Paul. He too will find his time retarded, and in the same measure. As Professor Montague has put it, with a kindly sense of what Peter's feelings must be in the case hitherto assumed:

Suppose that the stay-at-home brother should feel piqued by the youthful appearance of the other who has returned from abroad. He would only have to remember that all motion is relative and that consequently he had a perfect right to regard himself as the traveller and his brother as having remained stationary. In that case it would be *he* who looked and really *was* younger. But that could happen only in a universe in which squares were round and the *principium contradictionis* had been put to sleep.[5]

This, however, does not quite express the full implication, for the case supposed, of the classical principle of the relativity of motion. Many of the critics of this part of the Special Theory have followed its defenders in employing what we may call the method of alternating options; they argue that (on relativistic principles) the reasoning can be equally well worked from either end, and that therefore, as compared with his brother, *either* twin in turn can be shown to be younger.[6] But in fact *neither* Peter *nor* Paul "has a right to regard his brother as having remained stationary" and himself alone as the traveller. It is, of course, true that each is at rest in the frame of reference which he sets up on his own system, but even in his own frame neither is at rest relatively to the other. Along one of the axes of Peter's coördinate-system the distance between himself and Paul is continually changing, and along the corresponding axis in Paul's coördinate-system the distance between himself and Peter is continually changing; and this change in the relation of distance along an axis is what is meant, and all that is meant, by unaccelerated relative motion. A change of this relation between two terms cannot be unilateral; it must be predicable of both terms at once or of neither. There is, no doubt, a certain convenience, at least for the imagination, in conceiving of one reference-body as fixed and the other alone as moving, relatively to the first, but it is

[5] PHILOSOPHICAL REVIEW, XXXII (1924), p. 156. Professor Montague regards the absurdity of this apparent consequence as one of the reasons for rejecting the Special Theory, at all events pending a further experimental testing of the Ritz hypothesis, which proposes to explain the negative result of the Michelson-Morley experiment on the supposition that the velocity of light is affected by the motion of its source.

[6] *Cf.* D. Gawronsky, *Der physikalische Gehalt der speziellen Relativitätstheorie*, 1925, p. 30, for the same objection to the Special Theory and a review of some of the replies to it by German physicists. Gawronsky's review, however, does not seem to me to include all of the significant attempts to deal with the difficulty, nor to deal satisfactorily with all of those he mentions.

a convenience gained at the cost of a temporary relapse into the conceptions of absolute space, position and motion. And the alternation of options in taking one system *or* the other as in motion can be legitimate only because both are *actually* in (relative) motion, however you 'take' them. An arbitrary choice of one way rather than another way of describing an objective fact cannot alter the nature of the fact.[7] If, then, either twin has been in relative motion, both must have been, and with the same relative velocity; and therefore—since the direction of motion is, in the Special Theory, irrelevant to the contractions and retardations—all the benefits of rapid travel supposed hitherto to have been gained by Paul between his separation from and reunion with Peter, must equally accrue to both. Their ageing will, therefore, have been retarded in the same ratio.

Retarded, it must be asked, in comparison with what? It is upon this question that it is especially important to have a clear understanding, for much confusion has arisen in consequence of vague or wavering ideas on this point. In order to answer the question correctly we must recall the logical function in relativist physics of the Lorentz transformation-equations. They are (in Einstein's words) formulas "for determining the space-time magnitude of an event when changing from one [that is, from *either*] body of reference to another"—a state of relative motion being assumed to exist between the two reference-bodies and the invariance of the velocity of light being taken as an established fact. The formula for the contractions gives the lengths of the rods etc. on Paul's system when those lengths are observed (or computed) on Peter's system; and the formula for the retardations gives the time-interval between two readings of the clocks on Paul's system as that interval is observed (or computed) on Peter's system. It is by comparison with the clocks on the earth that Paul's clocks will be slow on his return; and it is

[7] This is recognized by Einstein himself when he remarks, *à propos* of the familiar illustration of the 'moving' train and the 'stationary' embankment: "From the point of view of the theory of relativity the fact cannot be expressed by saying that 'it may *possibly* be the surroundings of the train (rather than the train) that have undergone an acceleration.' It is not a question of two different, mutually exclusive hypotheses about the locus of the motion, but of two ways of describing the same fact (*Sachverhalt*), both equally valid in principle." DIE NATURWISSENSCHAFTEN, VI, 1918, p. 701).

commonly assumed that, if Peter had sufficiently powerful telescopes, he would, during Paul's voyage, sensibly observe similar discrepancies between the readings of Paul's clocks and the readings of his own at corresponding instants. (To determine the corresponding instants it would be necessary for Peter in the case usually supposed, that of a journey out and back, to make the proper allowance for the time of transmission of the light from Paul's projectile to the earth.) The contractions and retardations are predicated *of* Paul's rods and clocks, but it is on Peter's system (the earth) or from Peter's point of view that they manifest themselves; and the other term of the comparison is a magnitude on Peter's system. In short (to quote a typical statement of the conclusion): "If in any two Galilean frames originally at relative rest, two identical clocks and two identical cubes are placed, and if then the two frames are set in relative motion, *either* observer would discover as a result of his measurements that *the other man's clock* had slowed down and that his cube had become flattened in the direction of the relative motion. *Nothing would have happened to the cubes and clocks;* only the conditions of observation would have been changed".[8]

Here, it is true, no change of a physical nature seems to have actually befallen either brother or anything that is his—except in the appearances which the other brother and *his* objects present. But if this were all, the orthodox asymmetrical paradox of the twins would not arise; for if nothing had happened during Paul's voyage to his body, or to anything that he carried with him, as a consequence of his relative motion, then manifestly no *effect* of anything's having thus happened would be apparent when he and Peter again came to rest on the earth. It would follow that each brother's observations or measurements of the objects on the other's system would have *no physical validity, as descriptions of objects on the other system;* the only physical facts (if any) corresponding to them would be of the nature of perspective distortions manifested in the mirrors, camera-plates, or time-recording instruments carried by each external observer. But the orthodox version of the tale of Peter and Paul implies (even though writers who tell it often disclaim this implication) that *the retarda-*

[8] D'Abro, *The Evolution of Scientific Thought*, 1927, p. 145; italics mine.

tions observed by Peter have really or physically happened to Paul—though, until his return, he would not be aware of them through any measurements made on his own system, since all his measuring-instruments would be affected equally with the things they measured. Something physical assuredly *has* happened to Paul in consequence of his relative motion if (as is assumed) at the end of it he is younger than he would have been if he had stayed at home—in other words, younger than Peter who did stay at home; or if, supposing his relative velocity to have been very great, he is alive whereas Peter is long since dead, as he himself, but for his travels, would also have been. Between being dead and being alive there is, one can't but think, a real difference; and this difference between the effects of relative motion and non-motion (for Paul) implies that the retardations have not merely *appeared to Peter* or, after his demise, to other terrestrial observers, to be taking place on Paul's system, but that they truly have been taking place on it.

But, since relative motion is reciprocal, all of these things must hold good also of Peter. His lengths and durations will seem shortened and retarded to Paul; that is to say, his rods will seem shorter than rods originally (*i.e.*, when in a state of rest on the earth) of the same length, on Paul's system, and his clocks will seem slower than clocks on that system with which they were originally synchronous. But, by the presupposition of the orthodox version of the story, these differences observed by Paul from his projectile will actually hold good of Peter and the rods and clocks on the earth. They will not only seem but be shorter and slower than Paul's. Thus, according to the logic of the customary argument about the twins—when we keep in mind the reciprocity of relative motion—Paul's clocks will be slower than Peter's and Peter's slower than Paul's; and Paul on his return, or at any time during the voyage, will be physiologically as well as chronologically younger than Peter, and Peter will be physiologically as well as chronologically younger than Paul; and, in the extreme case, when the projectile comes back to earth, Paul will be alive while Peter is dead, and also Peter will be alive while Paul is dead—that is to say, Paul will simultaneously be both dead and alive, and Peter will simultaneously be both dead and alive.[9]

[9] Some interesting further complications would result if we should introduce a third brother, a 'triplet', setting out and returning at the same time as Paul, but

This consequence being absurd, it is certain that there is something wrong somewhere in the premises from which it follows. Let us, then, recapitulate briefly those premises. They consist of the following propositions: (1) the retardations and contractions, in the amounts specified by the Lorentz transformation-equations, are *observable* under the conditions theoretically assumed; (2) they are *comparative, i.e.*, they characterize the lengths, durations, clock-readings, and ages of organisms on one system in contrast with those on the other; (3) the motion of the two systems is relative and therefore *reciprocal;* (4) the contractions and retardations, being by hypothesis consequent solely upon this motion, are also reciprocal, *i.e., each* observer finds that they hold good for objects and time-lapses on the other system, in contrast with his own; (5) the comparative contractions and retardations thus noted or computed by the observer on each system, in consequence of relative motion, are *physical facts in the other system, i.e.*, are actual modifications of the shapes of objects and the behavior of chronometers in the system relatively to which the objects and chronometers are at rest. This last, we have seen, is necessarily implied by the usual assumption, in the asymmetrical version of the paradox of the twins, that Paul's bodily processes will be so affected by his high relative velocity that there will be a difference between his physiological condition and Peter's on his return, a difference *then* observable by both of them—unless it is so great that Peter is already dead. Now, though the physicists who have told us of the age-deferring effects of truly rapid transit have not always recognized quite the full enormity of the paradox which results if all five of these propositions are accepted, they have usually felt it needful to avoid the slightly milder, though not fundamentally different, paradox resulting from the application of what I have called the method of alternating options—the conclusion, that is, that *either* Peter or Paul could equally well be proved, on relativistic principles, to be younger than the other. They have therefore sought to show that certain of the propositions above mentioned are false. And the ones which they have usually chosen to eliminate are precisely those

moving, relatively to Peter, with half of Paul's velocity; but I will not lengthen the argument by inquiring into the consequences of such a supposition. They are partly suggested by Guggenheimer, *The Einstein Theory*, p. 180.

which are most certainly true, namely (3) that relative motion is reciprocal, and (4) that any effect attributable solely to such motion must be symmetrical, occurring equally on both systems.

I shall now review the methods employed by numerous physicists or mathematicians of distinction in their attempts to justify the denial of the two last-mentioned propositions, or by other means to escape the implication of the paradox in its symmetrical form. The first four of these are efforts to accomplish this end from the standpoint of the Special Theory alone.

1. What has come to be the stock method for meeting the difficulty, so long as the argument is conducted within the limits characteristic of the Special Theory, is exemplified in Max Born's authoritative exposition. He first affirms the indubitable truth of the paradox of the twins in its asymmetrical form: "if A and B are twin brothers, then B must, on his return from the journey, be younger than A"; precisely this is the *wunderlicher Schluss* to which we are to habituate our minds. But to the argument that, since the motion of A and B is relative, the same conclusion must apply to A, Born answers: "The principle of relativity has to do only with systems in uniform rectilinear motion with respect to one another; to accelerated systems it is in the form thus far set forth (*i.e.*, that of the Special Theory) not applicable. System B, however, is accelerated. It is therefore *not* equivalent to A. A is an inertial system, B is not." [10] Hence the symmetrical paradox does not arise.

Now, disregarding for a moment the premises of this reply, there is plainly something peculiar about the logic by which the conclusion is derived from the premises. For the reasoning, when fully stated, appears to run thus: the occurrence of a retardation is inferrible only from the Special Theory; that theory applies exclusively to inertial, *i.e.*, unaccelerated, systems; system B (Paul's) is *not* an inertial system; *ergo*, it *can* be inferred that a retardation will occur in this system. Peter's system (A), however, *is* an inertial system; *ergo*, a retardation will *not* occur in Peter's system. This, surely, is a topsy-turvy sort of logic. If the other postulates of the physicists are admitted, it seems plain that they have attributed the age-deferring effect of Paul's

[10] *Die Relativitätstheorie Einsteins*, 1922, p. 194; English tr., 1924, pp. 214 ff.

adventure to the wrong twin; it will not be the traveller in the projectile but the (so-called) stay-at-home brother who will be the younger at their reunion—since he alone conforms, so to say, to the requirements for the applicability of the Special Theory. It is not, however, difficult, to see how physicists may have been led into this extraordinary reversal of the conclusion which follows from their premises. They 'take' Peter's system as 'at rest', *i.e.*, as not in relative motion at all (though it is, of course, upon relativistic principles, preposterous to take it so); they infer therefore, that Peter's rods or clocks will not be contracted or retarded; they know, however, that according to the theory contractions and retardations must take place when relative motion occurs; and they therefore attribute these to the rods and clocks on Paul's projectile—forgetting, for the moment, that, if that system is accelerated, as they in fact assume, the theory does not apply to it. If they wish to make all three assumptions, *viz.*, (a) that Peter is 'at rest', (b) that Paul's motion is accelerated, and (c) that the acceleration is not theoretically negligible, the physicists surely ought to infer that there will be no retardation on either side and no eventual disparity in age—in other words, that there is no such thing as a time-retarding *round-trip*, or at all events that the Special Theory does not justify any inference as to what the effects of such a trip will be; and therefore that the story of Peter and Paul, as usually told, has no proper place in expositions of that theory. It will not, however, follow that the theory does not imply that there will be time-retarding effects of a one-way (*i.e.*, an unaccelerated) journey.[11] Into this possibility we shall inquire presently.

[11] There would, of course, be three phases of acceleration in the motion of Paul's projectile: when he starts, when he reverses his direction relative to Peter, and when he lands on the earth. Physicists who dwell upon the acceleration usually appear to have the second in mind and to ignore the first and third. But the first alone would suffice to make the Special Theory inapplicable to Paul's journey—and therefore to render the deduction of a retardation uninferrible—*so long as the starting-phase is reckoned a part of the journey.* On the other hand, after this phase is over, and before his reversal of direction, Paul *will* be in a state of uniform rectilinear motion relatively to the earth, and *with respect to this phase*, if the Special Theory is true, a retardation of clocks, physiological processes, etc. must be deduced—and would be observable if the conditions specified in the supposition were realized. But it must be deduced for both of the participants in the relative motion; hence it

This argument, then, draws the wrong conclusion from the premises. But we must also examine more closely the premise from which the asymmetrical character of the retardation is inferred. That premise consists in the supposition that *only* Paul will undergo an acceleration when he turns his projectile homeward. Now it seems a paradox not less extraordinary than that of the twins that one of two systems in relative motion can have *that* motion accelerated while the other does not. Yet we are told that this is precisely the essence of the special principle of relativity; it "upholds the relativity of velocity and the absoluteness of acceleration".[12] Because of this, "the special principle *does not state that . . . when two bodies are in relative motion we can consider either one of them as being at rest*"; it asserts that "reversibility of this kind is possible *only when the the motions of both bodies are Galilean*". Now "in the present case the state of the twin remaining on earth is truly Galilean (if we neglect the earth's rotation and the curvature of its orbit); but this Galilean condition no longer applies to the twin who reverses his course. . . . In this case there is acceleration, and the well-known symptoms of accelerated motion, namely, forces of inertia, would make their appearance and would bring about well-defined physical disturbances." [13]

The paradox of absolute and unilateral acceleration, does not, however, serve to eliminate the paradox of the twins-of-unequal-age. It does not even substitute the one for the other; it merely adds a new difficulty while leaving the first unaffected. If you mean by acceleration a change either of direction or of velocity of motion, and if you are talking about the *relative* motion of two designated systems, S and S′, then it is a flat contradiction to say that S alters its velocity or its direction relative to S′, while S′ retains the same velocity or direction of motion relative to S as before. Relativistic physicists have, however, been led into this

will be a retardation of the clocks, ages, etc., of each in comparison with those of the other. It will appear below, however, that the relative motion of Peter and Paul can be conceived in a way in which *none* of the three accelerations need be supposed to occur at all. And in the General Theory we shall find that the first and third accelerations are supposed not to affect the retardations in any way.

[12] D'Abro, *The Evolution of Scientific Thought*, p. 104.

[13] *Ibid.*, p. 236.

joint assertion of two seemingly incongruous theorems—that velocity and direction of motion are relative, and acceleration, which is merely a change of velocity and (or) direction, is absolute, by a notorious empirical fact—namely, that the *dynamic effects* of acceleration, so far as they are observable by us, are *not* identical in the case of two systems in relative motion. If Paul reverses his direction suddenly, he, his clocks, and all material objects which he carries with him, will receive a terrific jolt. They will manifest their inertial forces by a tendency to continue to move in the same direction, which it will require the action of powerful contrary forces to overcome; and a dislocation of their relative positions in the system will take place. But nothing of this sort, it is admitted, will happen on the earth. Peter will feel no jolt, and the mechanism of his chronometers will not be disturbed, when Paul reverses his direction. This disparity in the dynamic effects is then, by the relativist, read back (illicitly) into the purely kinematic concept of acceleration itself.

There is, however, a conceivable argument based upon the empirical fact in question which has a certain *prima facie* plausibility. That the acceleration as such is reciprocal may be (since it must be) admitted by the relativist; but since this reciprocal acceleration does not produce the same dynamic effects in the two systems, it may be urged that it is possible that a reciprocal acceleration will likewise produce asymmetrical effects upon the lengths and time-lapses on the two systems. One reply to this argument has been presented by Bergson.[14] By a 'system' in kinematics is meant a set of points or of bodies which are at rest relatively to one another. Theoretically, two moving 'systems' are equivalent to moving points; if we regard them as such, the acceleration of relative motion will obviously be in all respects symmetrical. We may, however, attribute to the two systems any dimensions we like; if we still conceive each of them *as* a system, *i.e.*, "a collection of points which invariably maintain the same positions with respect to one another, and if we take account only of translatory motion, it is evident that we can treat them as if they were two material points, and the acceleration will, again, be perfectly reciprocal".[15] But when physi-

[14] *Durée et Simultanéité*, 2nd ed., pp. 259–265.

[15] *Ibid.*, p. 261.

cists speak of phenomena such as dislocations resulting from reversals of direction as occurring "within a system", they are confusing the concept of a system with that of a multiplicity of separate systems; if, for example, a traveller on a train is jolted off his seat by the sudden stoppage of the train, "the material points composing his body manifestly do not preserve invariant positions relative to the train, nor, in general, to one another. They therefore do not constitute *inter se* a single system; they are a number of systems, S^{II}, S^{III}, etc., which show themselves, when the 'jolt' occurs, to be animated each with a motion of its own. Hence, in the eyes of the physicist on the system S, each will have its own proper time, t^{II}, t^{III}, etc. The reciprocity will still be complete between S and S^{II}, between S and S^{III}, as it is between S and S^{I}. So long, then, as we consider only the relative motion of two systems properly so called, every consequence of such motion will be symmetrical.

This reply however, is purely formal and hardly sufficient. After all, it will be said, Paul's clocks, his body, etc., are systems, not single points; and they and all the other objects carried in Paul's projectile *will* be jolted, in consequence of the acceleration, while the objects on the earth will not; and it therefore is still possible to argue by analogy that effects on chronometers, etc., other than those connected with the jolting, which are also consequences of the acceleration, may likewise be unilateral. The fundamental objection to this argument is not, then, that given by Bergson. It is that the jolting could not conceivably be confined to Paul's system *if it were assumed that the acceleration (change of direction) is merely relative to Peter's system*, and therefore reciprocal, and that the jolting is purely a consequence of *that* acceleration. To say that it is so confined would (upon these assumptions) be to say that precisely the same phenomenon—*viz.*, a reversal of the direction of the relative motion of a body—produced a given effect in one case and no effect in the other; but science cannot proceed upon the hypothesis that an identical cause sometimes produces an effect and sometimes does not, when other conditions remain invariant. If the effect *is* unilateral, then one or the other of the assumptions mentioned must be false: either the two systems are not in merely relative motion,

i.e., the so-called inertial system (the earth) is in a state of rest in an absolute space or with respect to some absolute reference-body; or else the dislocations of objects on Paul's system are *not* consequences solely of a reversal of direction of relative motion with respect to the earth. The former alternative would take us back to the Newtonian universe; the latter might conceivably be brought under the well-known hypothesis of Mach about the nature of inertial forces. Paul's system would be affected differently from Peter's because its relations to the matter composing the rest of the universe would be different.[16] It is unnecessary to ask here which alternative is preferable, since either would destroy the analogy between the ordinary dynamic effects of acceleration and the effects relevant to the Lorentz contractions and retardations. For in the latter case it is assumed (in the Special Theory) that the only motion in question *is* the relative motion between the two systems, and also that any effects (of this sort) of the acceleration (if there are any such effects) will be due solely to the change in this relative motion, *viz.*, to the change of the direction of the motion of each system with respect to the other. Any *such* effect, then, resulting from the acceleration should be the same on both systems. There is, it is true, a tendency among physicists, even when expounding the Special Theory, to drag in a third (and essentially an absolute) reference-body, as the explanation of the postulated absoluteness of acceleration. This conception, however, has a place—if anywhere—only in the General Theory; its use in that theory will be considered later. Until such a conception is explicitly introduced and justified, we are concerned only with the motion which is a private affair between Peter and Paul; and from this point of view, *i.e.*, that of the Special Theory, we must still conclude (a) that no comparative retardation whatever can be deduced for the case of a journey in which there is a reversal of direction; but (b) that if there *were* any retardation—*i.e.*, if the acceleration in question were treated as theoretically negligible—the comparative retardation inferrible would necessarily be reciprocal.

But quite aside from these considerations, the invocation of the notion of the absoluteness of acceleration is beside the mark

[16] *The Science of Mechanics*, tr. by T. J. McCormack, 1907, pp. 231–238.

for a simpler and more obvious reason. The paradox of the twins—in its symmetrical form—arises even though no reversal of Paul's motion, and no acceleration whatever, is supposed to occur. This is sometimes recognized even by those who begin by telling us that the paradox disappears when the absoluteness of acceleration is recognized. Thus d'Abro observes that "as a matter of fact we can amend the problem of the two twins so as to eliminate the acceleration by assuming that the so-called travelling twin" proceeds "without stopping or reversing his course. In this case the motions of both twins are Galilean; and, true enough, the special principle of relativity permits us to consider either one of the twins as at rest and the other in motion." The supposition of an actual return (which was introduced by the relativistic physicists themselves) makes the story more striking, but it is not necessary in order to show the consequences which result from conceiving either twin to be physically affected by the relative motion. Instants simultaneous (even according to Einstein's definition) can be taken on the two systems, without assuming that there is any cessation of the motion or reversal of its direction. This may perhaps be more clearly seen if we imagine Peter to be on a flat platform extending as far as we please in either direction, and Paul to be on a similar platform immediately adjacent to Peter's and in uniform unaccelerated motion relative to it and parallel with it. If, while the two were at rest, synchronized clocks and automatic cameras were placed at intervals along the inner edges of both platforms, the event of any reading of any one of Peter's clocks will be simultaneous with the reading of any clock of Paul's which may be passing, for both clocks will be in this case virtually in the same place. Nevertheless their readings, according to the usual interpretation of the theory, will not agree; and their disagreement will be of the peculiar sort already mentioned. Peter's clocks, after the motion has begun, will be slower than the corresponding clocks of Paul as they pass them, and *vice versa;* and Peter's cameras will, after 200 years have elapsed by his clocks, show Paul passing them with the appearance of a youth of 22, though on his own platform Paul will long have been dead; and Paul's cameras will similarly show Peter as a youth of 22 after he has, on his own platform,

long been dead. And, according to this "accepted part of orthodox physics" each set of cameras will correctly record the facts as they are on the other platform. Or we may alter the supposition a little, in order to avoid any complication involved in getting the motion started. Peter and Paul, not now brothers, must be supposed to have been born simultaneously at points A and A′ when these points on the two platforms were passing each other, and each remains throughout at the place of his birth on his own platform. In both directions from A and A′, on both platforms, observation-posts are placed at wide intervals; at each of these assistant observers are stationed, duly provided with clocks originally synchronized. It is the law on each platform that no one can be appointed an assistant observer unless he was born at the same time as Peter and Paul. Assume that 70 years have elapsed on Peter's platform up to the moment when he passes observation-post P′ on Paul's platform. Given sufficient velocity, he, an old man of 70 gazing at his coeval, the assistant-observer at P′, will seem to that observer to be a young man of 21; and assuming, as is done in the customary story, that a retardation observed from one system is a physical fact on the other, Peter will *be* twenty-one as well as seventy. At the same time his coeval at P′ will appear to Peter to be 21, and will therefore be of that age, as well as of the age of seventy. We thus eliminate any acceleration, and therewith all attempts to evade the symmetrical form of the paradox by invoking accelerations. The fact that it does not happen to be practicable to construct two such platforms is no more relevant to the question before us—*viz., What is implied by the Special Theory with regard to the effects of relative motion in any theoretically possible case of such motion?*—than is the fact that it is not practicable to construct the projectile in which Paul is supposed to move, in the more usual version of the story.[17]

[17] I have initially assumed in the argument above that two persons born at the same time, and in unaccelerated relative motion, will, on their respective platforms (other conditions also remaining the same), age equally between the moment of their birth and a subsequent moment identical for both; and that therefore the observer at P′ must, from this point of view, be 70 when Peter is 70 (though when reciprocal comparative retardations are assumed, each must also be of another age). Any other initial assumption would obviously conflict with the principle of

2. Yet we are frequently told that, even when the relative motion of the two systems is assumed to be unaccelerated, no real contradiction is implied by the Special Theory. One supposed proof of this has been offered by d'Abro. We are to assume that Peter, the earth, and a distant star, are all at rest *inter se*, and that Paul travels without a stop past earth and star; and are to suppose further that a rigid rod extends from the earth to the star. A certain relative velocity being assumed, "calculation would show that the duration of the passage of the travelling twin from earth to star would be twenty years in the opinion of earth observers and only ten years in the opinion of the wanderer". Now the reason for this difference (we are told) is that

> Since a relative motion exists between the so-called wanderer and the rod, the distance from earth to star, or the length of the rod, is contracted to half its length when computed by him. . . . If the wanderer were to consider himself at rest and the earth-twin, together with the earth and star, travelling past him, exactly the same conclusions would endure; since once again the rod, or earth-star distance would be animated with exactly the same relative velocity in respect to the so-called wanderer, and it is relative velocity, and not absolute velocity, that counts. We see therefore that no inconsistencies can arise whether we consider one twin or the other as at rest.[18]

What this appears to mean is that Paul's 'opinion' as to the duration, on his own system and on Peter's respectively, of his voyage would be exactly the same, whether he expressed the fact of relative motion between himself and the rod and its appendages by saying that he was moving past the rod or by saying that the rod was moving past him; and that Peter's 'opinion' would be likewise unaltered, whichever form of expression *he* used.

causal uniformity. The relativist may, however, prefer to reason differently, as follows: When Peter is 70 on his own platform he will find the observer at P′ to be, in consequence of the time-retarding effect of his unaccelerated relative motion, 21 years of age. But the retardations are actual physical effects on the platform of the observed; therefore the person at P′ will really be 21. He, however, will correspondingly find Peter, who has also been in unaccelerated relative motion, to be, at the moment when they pass one another, younger than himself, *i.e.*, to be *less* than 21; and this will likewise be a physical fact about Peter on his own platform. Peter will thus, once more, be of two ages at once, and will be both older and younger than the observer at P′, who was born at the same moment as himself. Some further complications of paradox which would follow I omit. If the relativist finds this way of arriving at self-contradiction more pleasing than that indicated in the text, it is equally open to him.

[18] *Evolution of Scientific Thought*, p. 237.

This *should*, it might seem, be true on relativistic principles; the motion being relative and therefore reciprocal, it should apparently make no difference from which side you calculated its effects. But it is not generally admitted by relativistic physicists that "exactly the same conclusions" would follow. According to the usual interpretation everything would depend on which system was *taken as* being at rest. If Paul assumed that Peter's system was at rest and his own in motion, and proceeded to make the calculation, he would arrive at the conclusion that it was his own cubes that were flattened and his own time that was dilated. The effect of changing your option as to which system you will consider at rest is, according to the orthodox reasoning on the matter, that set forth by Professor Eddington:

> An exceptionally modest observer might take some other planet than his own as the standard of rest. Then he would have to correct all his measurements for the Fitzgerald contraction due to his own motion with respect to the standard, and the corrected measures would give the space-frame belonging to the standard planet as the original measures gave the space-frame of his own planet.[19]

But it is not necessary, in the present connexion, to dwell upon this disagreement. Let it be supposed that, so far as d'Abro's account of Paul's computation goes, no inconsistency arises. The fact would, in any case, be irrelevant. For the inconsistency pointed out by those who cavil at the story of the time-retarding journey lies beyond; it inheres—it is necessary to repeat— in the following joint implications of the usual version: that, given the velocity and period mentioned, Peter's opinion—supposing it to accord with the Einsteinian interpretation of the Lorentz transformation-equations—will be that Paul's age, in a physiological as well as a chronological sense, when he is in the neighborhood of the star, is ten years less than his own; and that Paul's opinion will—on the same supposition—be that, when he is in the neighborhood of the star, Peter's age is ten years less than *his* (Paul's) own; and *that both opinions will be correct*—that is to say, that the comparative retardations will 'actually occur', and will not merely 'actually appear', from the point of view of the external observer, to occur. To this, the real argument of those who are sceptical about the advantages of rapid relative motion, the considerations thus far adduced by d'Abro manifestly offer no reply.

[19] *The Nature of the Physical World*, p. 15.

3. A definitive and summary proof that the hypothesis of the time-retarding potency of relative motion is free from any really paradoxical implications is offered by the same writer in the following:

> To what does the example of the two twins finally reduce? Simply to this: The departure of our twin brother and his return to earth constitute two definite events. The duration separating the events being robbed of any definite value by the theory of relativity, there is no cause to be surprised that this duration should manifest different magnitudes to different observers.[10]

This brief piece of reasoning is doubly irrelevant. It is irrelevant, first, because the paradox asserted by the critics of the usual relativistic version of the tale does not primarily consist in the different magnitudes, on the two systems, of the *duration between* the two definite events of Paul's departure and return; it consists in the fact that, according to the presuppositions of the orthodox view, Paul would at the end of that duration, and therefore *at a given moment*, be older than Peter and Peter older than Paul (and that each also would be younger than the other) in a physiological sense—and that in fact Paul, if he had travelled far and fast, would be at a given moment on the earth both alive and dead—as would also Peter. In the case of the unaccelerated or one-way relative motion of the parallel platforms, an equivalent absurdity would follow from the premises of the theory; when point A, where Peter stands, passed P′, Peter would, for reasons already given, be both 21 and 70 years of age; or, if the motion of the platforms had been fast enough, he would be both alive and dead. In this case, moreover, it would be obviously inadmissible to say that the "duration separating the two events" of Peter's leaving the immediate vicinity of A′ and arriving at the immediate vicinity of P′ would have no meaning. A countable series of events simultaneous and virtually identical (because occurring together at virtually the same places) would connect, *on both systems*, the two terminal events in question. The argument cited is irrelevant, in the second place, because the conclusion maintained by the proponents of the usual relativistic view—including the author of the argument—is that the retardations do *not* merely "manifest themselves to *different* observers", but are effects, on at

[10] *Op. cit.*, p. 235.

least one of the systems observed, which would manifest themselves by persisting differences, discoverable by *both* twins, in the physical conditions of their clocks and of their bodies at the end of the duration in question—unless the difference were so great that one of the brothers was no longer in a condition to observe anything.

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(To be concluded)

DISCUSSION

UTILITARIAN JUSTICE: TECHNICAL AND DISCRETIONARY

THERE is an exception to every rule, we are frequently told. Is this true also of rules of law and of the principles which generally determine their formulation, or is their universal utilization so compelling that no case, if it seems at all cognate to those instances to which a particular law ordinarily applies, can escape from its clamp? In an article on "Justice by Technicality" in this REVIEW for November, 1928, Mr. William W. Brewton undertook to answer this question, and the conclusion to which he attained is that courts should not recognize a case as exceptional and adjudicate on that basis.

"The law must have fixed rules", contends the writer, "rules which maintain for society a guaranty of legal right, though because of this very fixity what might be called a complete and fitting measure of right in a single case is defeated. . . . If the technicality in law is inevitable, it is just as true that its system is desirable. . . . Our only hope of justice through law is to apply the law for most cases to every case. . . . The one great maxim of law is the greatest justice to the greatest number, showing the necessity of framing laws according to the greatest number of cases experienced."

Law is a science, Brewton maintains, and so its rules, although applicable to future instances, are based on past experiences. By their very nature they are relevant to similar and not identical cases. No law can envelop every fact of a case; for if it did it would be legislated to cover only a single and peculiar congeries of circumstances. Laws are general and prescient; cases are individual, each with some differentiating quality. Laws are not only formulated in concepts but attained through the process of abstraction.

How, then, are laws and cases to be reconciled? The solution, it seems, lies in courts' disregarding the *differentia individualis* and making cases fit into the categories established by the law-making organs of the state.

Law, however, does differ from other sciences in that it is both social and peremptory; and it is in these characters that the writer discovers the justification for legal technicalism. He says: "And

just here lies the essence of the reason for technical law: the law is that peculiar agency which *enforces* [italics his] justice. To do so it must resort to rules, else justice cannot be guaranteed with equality and uniformity. And if there be no equality before the law, and thus uniformity within the law, who can say that the law is just?"

In brief, what the writer maintains are the following propositions: (1) that the basis for law is utility, (2) that uniformity and prevision are attributes of a just law, (3) that uniformity is a guaranty of equality, and (4) that the content of laws is determined by the inductive and prescindive methods, and that their necessity is like that of the laws of physical science. From these propositions, as premises, he concludes that the technicality of law is both inevitable and desirable. We shall now turn to a consideration of each of these arguments seriatim.

1. The maxim that it is the function of the courts to enforce the greatest justice to the greatest number need not lead to the conclusion that the form of justice best adapted to this result is the technical or mechanical one.

(*a*) There is a side to Utilitarianism which is, unfortunately, ordinarily disregarded, with the dire issue that both the philosophy and the protagonist suffer misunderstanding in proportion as the forgotten principle is of materiality to the discussion. This misinterpretation is usually occasioned by the failure to study two works of John Stuart Mill, one in the light of the other: *Utilitarianism* and the essay *On Liberty*. For one work without the other presents a mutilated doctrine: one states the moral philosophy positively, the other negatively; the one formulates the law for the individual, to guide him in his conduct towards his community, the other formulates it to guide society in its manifold relations to the individual. Utilitarianism, thus understood, is a compromise. To the citizen it says that where the state is concerned the law which is to determine his mode of conduct is that which orders the greatest happiness to the greatest number; to the state it says that where itself is not primarily concerned, it should not restrict the free action of the individual, but secure for him that freedom which he needs.[1]

This element of individualism does not really limit the social element (and we used the term 'compromise' only provisionally); for the state is directly affected by the well- or ill-being of each of its constituent members. When Mill declared that the "individual is not account-

[1] *Cf.* Dicey, *Lectures on the Relation between Law and Public Opinion in England during the Nineteenth Century*, pp. 134, 146.

able to society for his actions in so far as these concern the interests of no person but himself",[2] he meant that if in such instances society will interfere to restrain the individual, ultimately or soon it will be society itself that will suffer egregiously for its unwarrantable intervention. In brief, there is a sphere in which the concern of society is that the individual be unhampered in his actions, a realm in which the community is benefited only in so far as it accords recognition to the individual as such. Within this sphere of action it is the duty of the law to enforce freedom. There is, then, no principle of differentiation founded on an absolute distinction between a social good and an individual good;[3] for if in certain instances the state adopts the doctrine of *laissez faire*, it is because the adoption of this principle is for the ultimate benefit of society. In such a political theory there is nothing unctuously paternalistic; it is a system avowedly and without exception or qualification social.

It follows, then, that there is a class of cases in which the enforcement of a general rule may lead to immediate wrong to the individual and to no compensating mediate or immediate good to society, hence to a mediate wrong to society; cases which if recognized as exceptions to the general rule will lead to an immediate good to the individual and to no mediate or immediate evil to society, hence to a mediate good to society. Such instances present no conflict between justice to the individual and justice to society; the conflict is only between the interests of the individual and the letter of the law. Within their sphere justice is still unitary, and is attainable only by their recognition as exceptional cases.

At times it is necessary for the Utilitarian in jurisprudence to keep in mind that dictum of Markby's (not always unqualifiedly true, but true in this connexion) that "the value of law is to be measured not by the happiness which it procures, but by the misery from which it preserves us".[4]

As an instance of this class of case, *Bangs v. Brewster*[5] may be cited. In that case a shipmaster sent his wife to Orleans to establish their domicile there. She arrived at the destination but he did not. Yet the court held that her arrival established his domicile. To reach

[2] *On Liberty.*

[3] Contrast this with the view of Lindsay, Introduction to *Utilitarianism, On Liberty, and Representative Government*, p. xvii of the edition published by Dutton & Co.

[4] *Elements of Law*, sec. 58.

[5] 111 Mass. 382. *Cf.* Blackstone, *Commentaries*, 139; Pound, 5 Col. L. Rev. p. 346.

this result it made exception to three general, well-established principles; namely, (1) that for the establishment of a new domicile the *animus* alone is insufficient, but must be coupled with a *factum;* (2) that as to domicile, the wife follows the husband and not the husband the wife; and (3) that a domicile cannot be acquired through an agent.

(*b*) Cases may arise in which the needs of society clash with the needs of the individual, and it may be necessary in order to satisfy the superior needs of society to recognize these, too, as exceptional; cases, that is, the adjudication of which as exceptions to general rules can be justified only on the Utilitarian principle of the greatest justice to the greatest number.

The comparison of three cases that arose in courts of equity is in point here. In the New York case of *Whalen v. Union Bag Company,*[6] the plaintiff, a lower riparian owner, sought an injunction. The defendants owned a mill valued at a million dollars and employed therein five hundred men. Effluents from the mill which were discharged into the stream affected the value and use of the plaintiff's farm to the yearly damage of one hundred dollars. An injunction was issued. In the California case of *Hubert v. Portland Cement Company,*[7] dust particles from the defendants' cement-factory injured citrus trees grown by the plaintiff. The lower court issued an injunction, and the company's petition for the temporary suspension of the injunction during an appeal was denied, although the factory was valued at $800,000, employed five hundred men, and spent seventy thousand dollars per month. These cases are in accord with the general rule. The courts protected the property-rights of the plaintiffs, even though the damage done to them was slight in comparison to that caused by the decrees to the companies and, incidentally, to the communities in which they operated. In the Tennessee case of *Madison v. Ducktown Sulphur, Copper, and Iron Company,*[8] smoke from the defendants' plant caused discomfiture to the plaintiffs and injured the vegetation grown by them. The value of the lands of the several plaintiffs varied from sixty-six to a hundred dollars, while the defendants employed ten thousand men. Damages were awarded but an injunction was denied. This case is an extreme one, and the weight of authority is against it. Nonetheless, whether or not we agree with the holding in the first two cases, it is difficult to see how

[6] 208 N. Y. 1, 101 N. E. 805 (1913). According to the report of *Driscoll v. American Hide and Leather Co.*, 102 Misc. (N. Y.) 612, the plant has been vacant ever since the adjudication.

[7] 161 Cal. 239, 118 Pac. 928 (1911).

[8] 113 Tenn. 331, 83 S. W. 658 (1904).

anyone can believe that the court in the Tennessee case did an injustice.

"The law is never privileged to see nothing and know nothing save one man and his case", is the opinion of Brewton. "The law is the science of society." It is submitted that the truth of these assertions is borne out by the decision in the Tennessee case more than in the other two. It was the New York and the California courts, in following the general rule, that saw nothing but the plaintiffs and their cases.

It has been said by an authority that "the principle of healthy growth inherent in the law gives the courts the power to cast out obsolete rules which do not meet the needs of a developing social and economic system".[9] *Madison v. Ducktown Sulphur, Copper, and Iron Company* is an instance of the vitality of this principle; and an instance of an exceptional case. The governing and fundamental rule that *Salus populi lex suprema est* is, it is admitted, the basis of justice by technicality; but it is no less true that it also is the basis of justice by discretion, justice in the exceptional case.

"No amount of admiration for our traditional system", Dean Pound has said, "should blind us to the obvious fact that it exhibits too great a respect for the individual and for the intrenched position in which our legal and political history has put him, and too little respect for the needs of society, when come in conflict with the individual, to be in touch with the present age."[10] Under our subdivision (*a*) we showed that, in a conflict between the interests of the individual and the simple letter of a law, respect for the needs of the individual may lead to the recognition of a case as an exception to the general rule. Under (*b*) we saw that where the needs of society come into conflict with those of the individual, it may be necessary again, so as to satisfy the superior needs of society, to recognize cases as exceptional.

(*c*) There remain now to be treated those instances in which the opposition is not between the requirements of society and those of the individual, but between the needs of society and the mere letter of the law.

In the case of *Kiernan v. Portland*,[11] the words "charter amendment submitted by council" should have appeared on the ballot, and this was "in a sense" a mandatory requirement. But, held the court, a

[9] Walsh, *History of English and American Law* (1923), p. 260.

[10] 5 Col. L. Rev. p. 344.

[11] 57 Ore. 454 (1910).

failure in this respect need not render the election void. The omission could have misled nobody, as the important question for the voter was not who proposed the measure but what its real merits were. "Courts should hesitate to disfranchise ten thousand voters because of the neglect of an officer to comply with a technical and comparatively unimportant provision of the law, unless it can be seen that the effect of such negligence might have been to change the result of the election."

In *Re Application for Incorporation of North Milwaukee*,[12] Marshall, J., in speaking for the court, said:

> Courts have always, and very properly, when an act has been recognized as valid for a long period of years and large interests have grown up under it, particularly when it pertains to the agencies by or through which the sovereignty of the state is exercised, been very slow to pronounce it unconstitutional, and have not done so unless, as stated, its unconstitutionality was made clear, and beyond all reasonable question. In sustaining such laws the courts have gone so far as to hold that acquiescence may control even where constitutional questions are involved.

In the *quo warranto* proceedings of *Attorney General v. City of Methuen*,[13] in the enactment of the city charter, the state constitution was violated, and more than two years after the inauguration of a city government upon the supposed authority of the statute this action was brought. The court held that, although the principles are valid that no laches can be imputed to the state government, and that against it no time runs so as to bar its rights, and that estoppel does not ordinarily apply against the exercise of a public right, the interests of the people usually being held not to be prejudiced by failure of public officers to do their duty, yet under the circumstances of the case granting the relief sought would not be a discreet exercise of judicial power nor in conformity to the general public interests. The manifold activities of a municipality must have been conducted during the period; contracts must have been entered into, schools kept, police and fire-protection afforded, streets constructed and maintained, and the power of eminent domain probably exercised. The relief asked for would have caused great havoc, and so was denied.

2. It might be contended, in agreement with Brewton's general views, that in these various enumerated classes of case it would be just to enforce the general rule in each instance because conformity and prevision are themselves attributes of justice. Now while certainty of application is, doubtlessly, an element that cannot with

[12] 93 Wis. 616, 67 N. W. 1033 (1896).

[13] 236 Mass. 564 (1921).

reason be disregarded, it need not be allotted proportions of importance that do not rightly pertain to it;[14] otherwise every unjust law could be justified by showing that in its application it misses no one. Does not an unjust law lose its unjustness in proportion as exceptions come within its purview? In so far as it becomes less and less certain? Where *lex* and *jus* come to approximate to one another reliability and certitude are of prime importance, as then our reliance is on law as a means to a supralapsarian justice, as it were. But this does not mean that dependability is itself the factor which makes every law a just one. Certitude does not make a law just, although it makes the administration of a just law just. It is, of course, true that man does not feel himself altogether at ease because of the equivocation or probability of the future, and may prefer a certain greater evil to an uncertain lesser evil, but our concern here is not with comfort or safety.

Uniformity is not an end of the law, but is determined in each instance by the end of the particular law. As illustrative of what is meant, the following situation may be considered.

Suspension of seizin was fatal to an estate at common law. But suppose a remainder was limited to the children of a life-tenant, and the tenant died without issue surviving; within nine months thereafter, however, a posthumous child is born. Shall the child be permitted to take? The courts of England said no, because during the interval between the father's death and the birth of the child seizin was in abeyance. In some of our states, as in England in 1699,[15] statutes were passed correcting this flagrant and senseless wrong, but in other states the courts, of their own accord, recognized the situation as an exception to the general rule, and gave to posthumous children the same rights as they would have if they were in existence before their father's death.[16] That is to say, the child though unborn was accounted by the courts a 'natural person' for the purpose of doing justice.

However, for purposes of determining whether what would be homicide of a human being killed after birth was homicide of an unborn child, courts have treated him as *not* a 'natural person'. "Many men", Professor Dewey has said, "are now aware of the harm done in legal matters by assuming the antecedent existence of fixed principles under which every new case may be brought. They recognize that

[14] *Cf.* Pound, *Introduction to Philosophy of Law*, p. 128; Cardozo, *Nature of Judicial Process*, p. 67; *Paradoxes of Legal Science*, p. 29.

[15] 10 & 11 Wm. III, ch. 16.

[16] Walsh, *Law of Property* (2nd ed.), p. 487.

this assumption merely puts an artificial premium on ideas developed under conditions and that their perpetration in the present works iniquity." [17]

3. But uniformity, it seems to be contended, is a guaranty of equality. This use of the term 'equality' recalls to mind Anatole France's caustic remark that the law in its majestic equality forbids the rich as well as the poor to steal bread, to beg on the streets, and to sleep under bridges. Uniformity is a guaranty of equality, we would say, if the law is uniformly enforced among equals. Uniformity cannot be the means to the attainment of equality but of maintaining it. Uniformity of application is not a Procrustean Bed. Equality before the law can mean only one thing, namely, that a court cannot be a respecter of persons; that is a privilege that only the people have.[18] And such an equality it is the duty of a court to enforce even at the risk of making itself unpopular and the community less happy; and this must be true even in a state whose guiding political principle is Utility, for the basis of this principle is the postulate that every individual counts for one, and only one.

4. It is not always noted that induction is of two kinds, namely, scientific and logical, and that the generalization attained through the former method has the modality of probability, while the universal arrived at through logical induction has necessity. In the sciences any number of instances deemed by the investigator as sufficient are taken as *representative* of all others, and the common character discovered in them he attributes to the whole class. The inference seems to be drawn from all the parts to the whole, but in reality only a few parts have been illated to a whole. Logical induction, on the other hand, is strictly a reasoning from the parts to the whole, and is based on no presumptions about the uniformity or analogies of nature. The parts, in this process, are viewed as *constitutive*, as inclusive of every species of the genus or of every individual of the species. A conclusion thus drawn is governed by the necessary laws of thought and so is itself necessary.

Now law is not concerned, like logic, with pure concepts, but with facts; [19] so that if the premises of its rules are derived through the process of induction, that process is extra-logical or imperfect induction. The logician may order any terms he pleases, but no judge

[17] *Human Nature and Conduct* (1922 ed.), p. 239.

[18] For an interesting illustration *vide* 1 Sam. 14, wherein is related of Jonathan's disobedience, his sentence by Saul, and his rescue by the people.

[19] *Cf.* Gény, *Science of Legal Method*, p. 11.

can order facts; it follows, therefore, that the inferences that courts may derive from past experiences can have, at the most, only a high degree of probability. And so it is that the failure to view the recognition of cases as exceptional as within the rightful discretionary exercise of judicial power follows, in part, from the attribution of the mode of necessity to a conclusion that has only probability; with the result that the needs of actual life are sacrificed to mere concepts, that a *Begriffsjurisprudenz* usurps the place rightly belonging to a *Wirklichkeitsjurisprudenz*. As Ehrlich has said:

> A rule is to be framed, not necessarily always just, but at least certain, that can be ascertained in advance and will afford protection against arbitrary and biased judgments. In order to attain this end, the judge is to be subjected, bound hand and foot, to a rule that determines all things in advance. If an inference may be drawn from the experience of four centuries during which this legal technicalism held undisputed sway, it would seem that this goal had never been reached, and that it can never be attained. . . . There is no guaranty of justice except the personality of the judge. . . . It is true that the technical method of legal science dominates the application of the law; but like every other scientific doctrine it is bound to give way at any time before a better understanding of the truth.[20]

While the judge does not order the facts, he does order something, namely, the remedy; the rewards and the punishments are predetermined. So it is true that the law, in a certain respect, differs from the laws of other sciences, in that it is prescriptive while they are only descriptive. But this distinction is not at all a fruitful one, because it is based only on the methods necessary to bring about a desired result. If two chemicals are mixed, the result will follow from the concoction itself; but if John Doe murders Richard Roe, the arm of the law must set extrinsic judicial machinery in motion in order that the result desired by society come to pass. But in a state in which "they that plow iniquity and sow mischief, reap the same", and invariably, does it matter whether we call the law prescriptive or descriptive? Regardless of which term we choose to make use, what will happen is that upon certain events as conditions there will follow a certain predesignated result. The result is consequential by necessity, but the necessity is not of an absolute but of a hypothetical kind. Given different conditions, the issue will be different. And this is the reason why exceptions (really not a felicitous term) to rules are possible, *viz.* that the conditions are seen not to be fulfilled. The law is discovered to be too inclusive, applicable where it was not intended to apply, resulting in unnecessary harshness, stupidity, and injustice. A court has not only a physical eye by which it is able to read the

[20] *Science of Legal Method*, pp. 63, 65, 67.

words in which a law is expressed, but also a mind's eye by which it is able to note its real import. The exception is not to the directive element in the law; for, the conditions being different, the law has no application at all. Suppose, *e. g.*, that since the beginning of human history there were no record of a homicide in self-defense, and that based on this fact attained through induction (and it is only this fact and not the punishment that is attained by the use of the method), the general rule were formulated that every homicide should be capitally punished. But later, in the case of *State v. Doe*, the defendant pleads and proves that he killed in self-defense. Here is a condition which was not anticipated, because never before experienced. It surely cannot be contended that in this induction there was logical necessity, making such an instance impossible. What shall the court do? It may state its arbitrium in one of two ways (it is immaterial which it chooses): first, that the conditions being different from those which the law really intended, the law has no application at all; or, secondly, that unwritten within the law is the exception that the punishment shall not apply to him who takes a life in self-defense.

If, then, law is the science of society (this proposition we have neither accepted nor rejected), we have shown that the necessity for 'liberty of judicial decision' may often arise, calling for the application of an unwritten law, founded on what the court will consider to be just at the particular time and within the particular community;[21] the necessity, as Aristotle has said, for the correction of the justness of the written law when it is defective by reason of its universality.[22] Settings of which an abstract law has taken no account cannot always be disregarded, and may lead to the modification of a principle by a power,[23] or the modification of a power by a principle.[24] The content of that which is a science of a changing society cannot itself be unchanging;[25] and a philosophy that demands the greatest justice to the greatest number, that views the law as utilitarian or teleological, cannot see the technicality of the law as its prime character.[26] Without technicality there can be no intelligent control; but without pliability the law may be unintelligent.

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[21] *Cf.* Berolzheimer, *Science of Legal Method*, p. 178; Cardozo, *Growth of the Law*, pp. 136–137.

[22] *Ethics V*, 1137b; *Politics II*, 8.

[23] *E.g.*, *Union Transit Company v. Kentucky*, 199 U. S. 194 (1905).

[24] *E.g.*, *Matter of Cooley*, 186 N. Y. 220 (1906).

[25] *Cf.* Cardozo, *Paradoxes of Legal Science*, p. 11.

[26] *Cf.* Stammler, 21 Mich. L. Rev. pp. 647, 650.

REVIEWS OF BOOKS

The Quest for Certainty. By JOHN DEWEY. New York, Minton, Balch & Company, 1929. Pp. 318.

In a world like ours, where purposes are always mixed, complex, and partially unconscious, it would be difficult even for the author to be sure what it was exactly that he wanted most to do in writing this book. How much more rash for a reader to hazard an opinion! Yet the book suggests a primary motive in every chapter and the rashness of a guess may not make it the less appealing to the guesser. Mr. Dewey wanted, so far as lay in his power, to crumble into dust, once and for all, "the chief fortress of the classic philosophical tradition". Veteran of many battles, secure in rank and honor, he accepted the opportunity of the Gifford Lectures as a challenge to vanquish the enemy in the center of its fastness. One scarcely knows whether to admire most the daring of the attempt, the knowledge and experience brought to bear, the strategy employed, or the relentless energy of the attack.

The effect is tremendous. Dewey warns the reader that "the object of this criticism of historical theories of knowledge is not just to cast discredit upon them", but "to direct attention to the source of their errors". And the discussion bears him out. This however hardly improves the situation for the historical theories of knowledge or their proponents. They are subjected to such incisive and persistent criticism on page after page that the cumulative impression is one of stupendous destruction. Not a few readers, in all probability, will halt with this impression, either rejoicing at the havoc wrought in the camps of the classicists, idealists, and realists, or deploring what may seem a dogmatic and unaccountable insistence that everybody in the procession is out of step, save one. Even a sympathetic reader, proceeding steadily through the book, may, because of the sheer accumulation of refutations and denials, find himself inclined to the side of the views attacked, persuaded that the mistakes cannot be so uniformly and numerously on one side, and the truth so simply and completely on the other.

It would serve no good purpose to minimize the destructive nature of *The Quest for Certainty.* Any attempt to do so, aside from laboring against the plain facts, would becloud the issue to which Mr. Dewey

gives attention. One of the conspicuous excellencies of the study is precisely the gathering together and focussing of traditional philosophic ideas and the subjection of this material to uncompromising criticism. The Greeks, Spinoza, Locke, Newton, Kant, Fichte, Hegel, Spencer, modern idealists, realists, and others, are epitomized with conspicuous erudition. With uncanny ingenuity the basic errors which are said to have misled philosophers, and through them mankind at large, are lifted into prominence. And this slaughter of the giants (one almost slips into saying innocents) is, and one cannot help feeling was intended to be, the issue of the venture. At any rate, there they lie. Possibly they are not dead, only stunned; or possibly it is all an illusion, so that presently we may see them abroad again, their massive forms looming against the horizon of man's outlook on things and on life. But under the spell of the battle this appears very unlikely. As it concludes, knights who have borne great names in the philosophic tournament lie scattered and seemingly quite dead all over the landscape.

While it would be a mistake to minimize the destructive quality of the book, it would be a greater mistake to miss the deeper motive operative in this as in all of Mr. Dewey's writing. He is destructive, even in this volume which is so largely devoted to demolition, as a wrecking crew is destructive. Back of the din and the dust works a constructive purpose. Mr. Dewey is interested, as he says, in the establishment of "a kingdom of order, justice and beauty". This he believes can only be attained "through the mastery of nature's energies and laws", a mastery which depends upon the "operative thinking" developed in the field of natural science. But current philosophy in all its walks and ways goes back to a time when order, justice, and beauty were conceived to be supersensible in nature and when experimental science had not been thought of. Philosophic problems, ideals, and methods remain what they were in prescientific days, although the world man lives in and must deal with has utterly changed. Until philosophy as so conceived is demolished and a different type put in its place, not only have those who are bent upon the solution of vital human problems nothing to hope for from philosophers, but the great society which waits upon proper integration of human interests and natural forces is a vain hope.

Throughout Mr. Dewey's unwearied hammering at philosophic tradition this underlying interest is detectable. The negative phase of the discussion is obtrusive; but a second look discloses the positive motifs. Only a mind thoroughly at home in the story of man and

impelled by a constructive intent could so remarkably summarize critical stages and epochs in the history of ideas, and suggest their significance for the worthy conduct of life. And, although as a systematic expression of a philosophy *The Quest for Certainty* is not to be compared with *Experience and Nature*, it is nevertheless so rich in statements of a positive character that a considerable book might easily be made of them. They are already contained, as to doctrine, in what seems to me, from the constructive point of view, unquestionably the greater book, but they appear in this one also, which as a destructive effort surely has few equals in the history of polemics. The recognition of this double aspect, this destructive-constructive drive, prepares the reader to appreciate the book's value as a contribution to present cultural needs, and at the same time to recognize what, in the light of these needs, seem to be certain shortcomings in the general standpoint which the author has advanced with conspicuous ability and life-long devotion.

In Mr. Dewey's view the career of philosophy was determined by an early choice. Man, he says, has not always thought of himself as living in a world, but he has always been in some manner aware of an environment. The reader is reminded that primitive man faced this environment in nakedness, both physical and psychical. He was alive to perils which threatened him, and he gradually learned to deal with these perils. Some things he found it possible directly to control, some not, and the division of the phenomena of experience into the ordinary and the extra-ordinary (later called the natural and the supernatural) reflects the sense of power in the one case and the sense of impotence in the other. In time this difference developed a realm of arts and a realm of religion, one inferior, and one superior. "The inferior", says Mr. Dewey, "was that in which man could foresee and in which he had instruments and arts by which he might expect a reasonable degree of control. The superior was that of occurrences so uncontrolable that they testified to the presence of powers beyond the scope of everyday and mundane things." But since they were superior powers it was all the more necessary to get into proper accord with them. To accomplish this, magic, rites, and ceremonies, came to be depended upon.

This was the state of social culture when philosophy began its career. According to Mr. Dewey, philosophy freely adopted this dualism, reflected upon it, gave it rational formulation, and justified it. Moreover, philosophy espoused the superior realm for its own. Human history would have been different, far different, had the early

philosophers been able to choose otherwise; had they found it possible to turn their attention to the side of the arts. But philosophers committed themselves to the validation of traditional religious and moral beliefs and to a rationalistic method of procedure. "For over two thousand years", says Mr. Dewey, "the weight of the most influential and authoritative orthodox tradition of thought . . . has been devoted to the problem of a purely cognitative certification (perhaps by revelation, perhaps by intuition, perhaps by reason) of the antecedent immutable reality of truth, beauty and goodness." Philosophy having no rival, difficulties inherent in this procedure could be ignored. This happy state of affairs came to an end with the triumph of modern science. The coming of this rival into the field has set the problem for modern thought. How is the most refined and consequently successful form of knowledge, namely science, to be accepted and how, at the same time, are the higher values, the ideal and spiritual qualities essential to civilized life, to be conserved?

The answer to this question revealing, as it does, the heart of Mr. Dewey's contention, justifies a somewhat full quotation.

> If men had associated their ideas about values with practical activity instead of with cognition of antecedent being, they would *not* have been troubled by the findings of science. They would have welcomed the latter. For everything ascertained about the structure of actually existing conditions would be a definite aid in making judgments about things to be prized and striven for more adequate, and would instruct us as to the means to be employed in realizing them . . . The crisis in contemporary culture, the confusions and conflicts in it, arise from a division of authority. Scientific inquiry seems to tell one thing, and traditional beliefs about ends and ideals that have authority on conduct tell us something quite different. The problem of reconciliation arises and persists for one reason only. As long as the notion persists that knowledge is a disclosure of reality, of reality prior to and independent of knowing, and that knowledge is independent of a purpose to control the quality of experienced objects, the failure of natural science to disclose significant values in its objects will come as a shock. Those seriously concerned with the validity and authority of value will have a problem on their hands. As long as the notion persists that values are authentic and valid only on condition that they are properties of being independent of human action, as long as it is supposed that their right to regulate action is dependent upon their being independent of action, so long there will be needed schemes to prove that values are, in spite of the findings of science, genuine and known qualities of reality itself.

The procedure employed in the book may be illustrated by a typical example. "In some sense", we read in the first of the two chapters on ideas, "the cause of ideas, of thought, is felt to be that of the distinctive dignity of man himself. Serious minds have always desired a world in which experiences would be productive of ideas,

of meanings, and in which these ideas in turn would regulate conduct. Take away ideas and what follows from them and man seems no better than the beasts of the field." As philosophers have reflected upon ideas they have divided into opposing schools. Mr. Dewey describes the antithesis in this way: "To the extreme right are those who, under the banner of Idealism, have asserted that thought is the creator of the universe and that rational ideas constitute its structure. . . . At the other pole is the school of sensational empiricists who hold that the doctrine that thought in any mode of operation is originative is an illusion." According to them, "ideas are pale ghosts of flesh and blood impressions; they are images, pallid reflections, dying echoes of first hand intercourse with reality which takes place in sensation alone." Having presented the doctrinal extremes, he points out that "in spite of polar opposition between the schools, they depend upon a common premise. According to both systems of philosophy, *reflective* thought, thinking that involves inference and judgment, is not originative. It has its test in antecedent reality as that is disclosed in some non-reflective immediate knowledge. Its validity depends upon the possibility of checking its conclusion by identification with the terms of such prior immediate knowledge. The controversy between the schools is simply as to the organ and nature of previous direct knowledge." For traditional empiricism reflective inquiry is valid only if it conforms to sensory impressions; for objective idealism it is valid only if it reproduces the work previously effected by constitutive thought.

This common premise connects both schools with the Greek thinkers, according to whom knowledge is a relation to something independently real. Through them it became embedded in tradition. Therefore, in spite of other differences, the opposing positions agree in resting upon a basic assumption which took form before the rise of experimental science. This gives Mr. Dewey the cue for philosophic advance. "Let us suppose", he suggests, "that all that we know about ideas is derived from the way in which they figure in the reflective inquiries of science. What conception of their nature and office shall we then be led to form?" Well, we find that experimental science does not proceed without "large and far-reaching ideas and purposes", but "is dependent upon them at every point". The important fact to note, however, is that "it generates them within its own procedures and tests them by its own operations". In scientific experience ideas have an empirical origin and status. They are plans of procedure, designations of potential operations and, contrary to philosophic tradition,

are confluent with action, action which changes the face of the world. If this attitude toward ideas were generalized, as according to Mr. Dewey it should be, we should "have the earnest of a possibility of human experience, in all its phases, in which ideas and meanings will be prized and will be continuously generated and used. But they will be integral with the course of experience itself, not imparted from the external source of a reality beyond." The best appraisal of the importance of this shift from extra-experiential to intra-experiential ideas may be given in Mr. Dewey's words:

> It is not too much to say, therefore, that for the first time there is made possible an empirical theory of ideas free from the burdens imposed alike by sensationalism and *a priori* rationalism. This accomplishment is, I make bold to say, one of the three or four outstanding feats of intellectual history. For it emancipates us from the supposed need of always harking back to what has already been given, something had by alleged direct or immediate knowledge in the past, for the test of the value of ideas. A definition of the nature of ideas in terms of operations to be performed and the test of the validity of ideas by the *consequences* of these operations establishes connectivity within concrete experience. At the same time, by emancipation of thinking from the necessity of testing its conclusions solely by reference to antecedent existence it makes clear the originative possibilities of thinking.

After the same manner Mr. Dewey contends throughout the book; that is to say, he analyzes conflicting philosophies respecting crucial problems, finds in each instance a common point of agreement below the differences, finds this point of agreement to be a grave error, and finds the error to be due to a formulation which took shape and was engrained in tradition before the rise of modern science. When analyzed, the error always turns out to grow from the same root, the untenable separation of thinking and acting. So the next step is to bring thought and action into experimental coöperation as it is in science, and at one and the same time absolve the impasses in which the philosophies have been hopelessly involved and render possible the happy union of matter-of-fact knowledge with worthy purposes in all the phases of human living. The technique is simple enough, once it has occurred to mind, but an application of it such as is presented in *The Quest for Certainty* is a notable achievement in the intellectual history of man.

In view of the method employed and the doctrines promulgated in the book it is not calculated to win the hearty approval of the profession. The best that can be hoped for—and even this requires a stretch of faith—is that its frank, penetrating, scholarly critique will be sufficiently appreciated to bring about a thorough re-examination of current philosophic alliances. The degree to which, on the other

hand, Mr. Dewey's discussion will satisfy the reader who is in general accord with his critique will depend, among other things, upon the extent to which the constructive phase of the argument appears to meet cultural needs. In my own case, disturbing doubts remain. They are accompanied by the uneasy suspicion that a better understanding of Mr. Dewey would relieve them; but, as things are, they constitute so many points of serious questioning. Of these doubts three may be mentioned and briefly considered. They concern, broadly speaking, (*a*) the relation of science to life; (*b*) the specific nature of values; and (*c*) the ability of philosophers to perform the task assigned.

For a number of years I have been under the impression that Mr. Dewey's attitude toward science is ambiguous. His wholehearted endorsement of science is notorious; and in the present work he leans decidedly towards physics. This being the case, and his whole book presenting a plea for the application of science to social problems, the question naturally becomes acute in what terms he intends the application to be made. Does he mean that men who deal with the various social questions should reduce their material to the type demanded in the physicist's laboratory, or does he mean that the experimental mood, conspicuous in exact science, should be extended to the field of social problems where so much is still left to haphazard? He means at least the latter; does he also mean the former? On one angle of the question there need be no misunderstanding. He has no sympathy with those who make a fetish of science. He does not credit science with getting to ultimate reality at the expense of other ways of knowing or other ways of experiencing. This job is so well done that it should not need to be done again. He insists, moreover, that genuine knowing is not reserved for natural science. No words could be plainer than these: "There is no kind of inquiry which has a monopoly of the honorable title of knowledge. The engineer, the artist, the historian, the man of affairs attain knowledge in the degree they employ methods that enable them to solve the problems which develop in the subject-matter they are concerned with." In spite of this declaration, however, made several times, the discussion as a whole, and certain passages which emphasize the superiority of physical science in the field of knowledge, encourage the conclusion that if things were as they should be all knowing would be strictly patterned on the model set by the physicist. If this is the doctrine, it is an important and, I think, unfortunate one at a time when new emphasis is being put on the necessity of reducing economics and

sociology to quantitative studies, of making education and religion 'scientific', and of turning philosophers into mathematicians. I should like to be convinced that I have misunderstood the author in this matter.

The most meaty portion of the book, Chapter X, treating of "The Construction of the Good", is likewise the most tantalizing portion. The subject is one on which Mr. Dewey says profound and illuminating things, but in the saying of which he seems curiously shy. He recognizes as clearly as anyone could the contemporary want of authoritative criteria of conduct, and the confusion which grows out of the average man's attempt to be responsive to standards inherited from the past and to contrary demands made upon him by the exigencies of daily life. "Men hoist the banner of the ideal", he too truly says, "and then march in the direction that concrete conditions suggest and reward." And who more than he has insisted that what we need in philosophy is to be concrete and specific? Nevertheless, in the chapter devoted to the elucidation of value, a subject which he explicitly recognizes to be of supreme importance, he carefully avoids telling the reader what he regards as of real worth in life. Several times he seems on the point of doing so, but each time neatly avoids committing himself.

In a paragraph typical of this maneuver, Mr. Dewey says that "the formation of taste is the chief matter wherever values enter in". This prepares the reader to expect some definition or illustration of taste, without which the remark fails to illuminate the problem. But the expectation is disappointed. "Taste", the passage continues, "if we use the word in the best sense, is the outcome of experience brought cumulatively to bear on the intelligent appreciation of the real worth of likings and enjoyments." Now if only the phrase "intelligent appreciation of real worth" were transparent! Alas, it too needs elucidation, and consequently is ill-suited to do the vicarious work demanded of it. The paragraph comes to a close with a pregnant sentence which suggests much, yet leaves the reader just where he was: "The formation of a cultivated and effectively operative good judgment or taste with respect to what is esthetically admirable, intellectually acceptable and morally approvable is the supreme task set to human beings by the incidents of experience." Once more the insistence that taste in values is of supreme importance (which incidentally the reader does not doubt), and once more the refusal to indicate concretely what is implied.

Why Mr. Dewey should be so loath to be concrete is problematical.

In his anxiety to refute the notion that there is some final place to go, he may lean over backwards and leave the impression that going is not concerned with places at all, though he should be the first to object that going, as such, without places to mark its progress, is meaningless. Perhaps he has some deliberate design in his silence, or perhaps his genius is adverse to entering upon detailed amplification of theory. In any case, he has done enough, heaven knows, to be excused from doing more. Nevertheless the fact is that on this crucial problem *The Quest for Certainty* is strangely hesitant. This hesitancy has characterized the author in other books, as a result of which he is widely supposed to hold that the aim of life should be to *go;* not to go anywhere in particular (God forbid!), but to keep on going nowhere. With the numbers in mind who mouth the language while ignoring the spirit and the thought, one wishes that the doctrine were less open to misinterpretation.

Taking the argument as it stands, up to the point to which Mr. Dewey develops it, I do not see how it can be refuted nor its significance over-emphasized. At present the theoretic alternatives offered are an appeal to so-called eternal values or to immediate satisfactions. He thinks the second to be nearer the truth than the first. "I shall not object", he says, "to empirical theory as far as it connects the theory of values with concrete experiences of desire and satisfaction." The idea that there is such a connexion appears to him as the only way by which "the pallid remoteness of the rationalistic theory, and the only too glaring presence of the institutional theory of transcendental values can be escaped". Values, however, "may be connected inherently with liking, and yet not with *every* liking but only with those that judgment has approved, after examination of the relation upon which the object liked depends. A casual liking is one that happens without knowledge of how it occurs nor to what effect. The difference between it and one which is sought because of a judgment that it is worth having and is to be striven for, makes the difference between enjoyments which are accidental and enjoyments that have value and hence a claim upon our attitude and conduct." In other words, the rationalists side-step the reality of desires, while the empiricists side-step the regulation of enjoyments.

This is the dilemma that is to be resolved, and to Mr. Dewey belongs the credit of having made the horns of it inescapable except through more adequate insight into the conditions which give occasion to the problem. An abstract solution, however, is not sufficient, since the problem is finally one of practice rather than of theory. Instrumen-

talism must actualize itself in specific loyalties and deeds, unless it is to be mere talk or ideology. And the demand constantly being made by those who desire to live according to this philosophy is for concrete suggestions which will enable them to seek the good life with some confidence that they are on the right road. Mr. Dewey properly objects to the drawing up of "a hierarchical table of values at large once for all, a kind of catalogue in which they are arranged in an order of ascending or descending worth". But this does not rule out the possibility and the necessity of offering concrete suggestions, in a tentative manner, of some things the good man should aim to achieve and some things he should aim to avoid. Traditional views, if they were too rigid in their attitude, were at least definite in the programs they set before men, and there is no want of definiteness in the aims of the men and the institutions in contemporary life that are "in positions of privileged advantage", and, as Mr. Dewey deplores, utilize every modern achievement "to serve their own private or class end". Unless Instrumentalism similarly can attain definiteness enough to be depended upon as a way of life, its influence is bound to be limited and short-lived.

Finally, there is the question about the status of the philosopher. Mr. Dewey has him abandon "the search for absolute and immutable reality", and in place of it, has him act as "a liaison officer between the conclusions of science and the modes of social and personal action through which attainable possibilities are striven for". To me this seems not to go far enough. There can be no doubt that, as he declares, the meaning of science "in terms of the great human uses to which it may be put, its meaning in the possibilities of secure value, offers a field for exploration which cries out from very emptiness". And it may be conceded that philosophers should share in the discovery of this meaning. But to assign this function to them in any exclusive or monopolistic sense is to substitute wishes for realities. If one's analysis of the contemporary situation still permits the philosopher to be the supreme knower, who lays hold upon things as they really are, well and good. Once surrender this illusion, as Mr. Dewey has, and there is no stopping short of making the philosopher literally a joint venturer with all who seek knowledge or ideals. The need of the hour is not the training of thinkers who shall attempt to set authoritative goals for others to strive after, but the invention of ways and means for bringing together into active coöperation all those forces which have a bearing on the common welfare, material and cultural. For in the era that is upon us it is to such joint effort

that we must look for the vital office which Mr. Dewey assigns to the philosopher: the obligation "to search out and disclose the obstructions; to criticize the habits of mind which stand in the way; to focus reflection upon needs congruous to present life; to interpret the conclusions of science with respect to their consequences for our beliefs about purposes and values in all phases of life".

The conclusion then is that the destructive work has been thoroughly done. If the philosophic heroes who dominated the past have survived Mr. Dewey's attack we may assume that they are invincible. It is improbable that some one else will find a vulnerable inch of heel which he has overlooked. And the route for positive philosophic advance has been magnificently projected. What remains to be done is the indication of specific constructive details, and these can only issue from the combined intelligence and aspiration of the men and women whose activities make up the ruling forces of society. It is at this point that those who agree with the instrumentalist standpoint must take up the task and the opportunity.

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The Greek Atomists and Epicurus. By Cyril Bailey. Oxford, at the Clarendon Press, 1928. Pp. x, 620.

In the first part of this book Mr. Bailey tries to discover the threads that lead from Thales to Leucippus. His results seem to have been shaped somewhat by F. M. Cornford, more by Lucretius, and most by Burnet. From the first he has taken the tendency to find theological or antitheological elements in early Greek philosophy, and from the second the division of the thinkers concerned into three groups and various criticisms of them. Burnet's reconstructions are present to his mind throughout, though he does not always accept them. The main thing that he has rejected is Burnet's account of Anaxagoras, which certainly seems arbitrary in excluding flesh and hair and the like from the seeds. Mr. Bailey's account is better, but has its own difficulties. He holds, if I understand him aright, that Anaxagoras held that every one of the substances of ordinary experience is a collection of seeds of all kinds, most of which have the same character as the whole substance; and that these seeds are themselves, not collections, but *fusions*, of every existing substance, though they have the character of one only. It is necessary to say not merely that the substances of ordinary experience have all kinds of seed in them, but also that the seeds themselves contain all stuffs, because Anaxagoras says not merely that "there is a portion of

everything in everything", but also that "there is not a least of the small, but always a less", and because he seems to hold that the first of these two doctrines follows from the second (*ὅτε τοὐλάχιστον μὴ ἔστιν εἶναι, οὐκ ἂν δύναιτο χωρισθῆναι, οὐδ' ἂν ἐφ' ἑαυτοῦ γενέσθαι*). However small you cut up matter, which is infinitely divisible, you never get a piece that does not contain all substances.

There are four difficulties in this interpretation. First, the theory is perhaps a more subtle and complicated one than we ought to attribute to Anaxagoras; I think it more likely that he was what Mr. Bailey would call "a loose thinker", that is, a person who had not thought of all the difficulties that would occur to a modern thinker. Secondly, there is no direct evidence for the fusion. Thirdly, Mr. Bailey seems to be mistaken in supposing that his theory accounts for metabolism better than others. He does indeed save the doctrine of "everything in everything", but not in a way that is any use for the theory of physiology. For once a physiological change has taken place, and the seeds of blood have been separated out of bread, then, although there is still blood in the bread, it is all "fused" in seeds that are seeds of other things and mostly of bread, and since the seeds cannot (I presume) *in practice* be further broken up, the bread is for practical purposes as good as void of blood; which is the same difficulty as that of the ordinary theory. Fourthly, the view thus ascribed to Anaxagoras seems to be absurd, for, while it begins by assuming different kinds of substance, is not its conclusion, that *all* seeds are fusions of *all* kinds, equivalent to the assertion that there is only one substance? How serious this objection is depends on how likely Anaxagoras is to have noticed this absurdity.

In general this first part of the book is less easy to read than the rest, partly because the subject-matter is less continuous, and partly because the language is more pedestrian. The virtue of Mr. Bailey's style is clarity rather than pregnancy; he is definitely an 'as—to' writer, and there are numerous uglinesses such as "if we divided up a piece of blood, one would . . . arrive" (p. 545), and the like. The frequent praise of Epicurus is curiously cheap and unconvincing. The number of misprints also is greater than we expect from an Oxford book, and one of them, D instead of C at p. 566, is confusing.

With Democritus the exposition improves, although Mr. Bailey claims a rather surprising knowledge of that thinker's character (pp. 112, 126, and 210). The account of Epicurus, which is about two thirds of the book, is thoroughly interesting and illuminating, and supported by a full acquaintance with the relevant ancient and

modern literature. Only one sixth of it is given to his ethics. Mr. Bailey's main purpose is "to put an end to the negligent tradition that [Epicurus] 'adopted Democritus' Atomism to act as a basis to his moral theory'" (p. 530). He holds that both ethics and physics are necessary consequences of the fundamental principle of the Canonice, that sensation is true and the only starting-point. "If we are to quarrel with Epicurus' moral theory, we must quarrel with his psychology, and if we are to quarrel with his psychology, we must attack the root-principle of the whole system, the infallibility of sensation" (p. 527). Here and in some other places he seems to speak as if all Epicurus' other main views were strictly demonstrative deductions from his view about sensation. While this is a large exaggeration, and while such prases as "stern philosopher" ring wholly false when applied to Epicurus (p. 520), Mr. Bailey's picture of him as a systematic thinker is extremely plausible and fascinating, and a good deal of it is probably true. His enthusiasm for his subject is another thing that makes his book valuable. But the best feature is the working out of atomic materialism in great detail in all its branches. Speaking of the doctrine of the soul, he says that "it is almost impossible for us to approach the whole question in a sufficiently materialistic mood" (p. 384); but the way in which he overcomes this difficulty, both here and in the other parts of physics, is most admirable and instructive. We are enabled to visualize in detail the atomics of the gods and our knowledge of them, of sensation, of thought, of acts of will, and of practically everything else except the *παθή* of pain and pleasure, which seem to be dismissed rather summarily as dislocation and restoration (p. 485). He makes the swerve seem a reasonable doctrine, though he does not succeed with atomic weight.

The thoroughness of his account seems to reveal a difficulty in Epicurean physics which he himself does not fully realise. It is hard to see how, on atomic principles, any compound body can hold together; for, while we often hear of hooked atoms and the like, there is evidence to show that all atoms in compounds are always vibrating. How are these two doctrines to be combined? Mr. Bailey supposes that in the more solid bodies the atoms are actually hooked into each other, but not so tightly but that they can still oscillate; while in bodies where the atomic contact is only a momentary blow the unity and coherence of the whole is secured by a *harmony* in the movements of all its atoms. He does not go on to point out that such a harmony could only consist in the fact that, every time an atom was deflected by another, it was deflected not into outer space but into a third atom

belonging to the same compound. This is surely the only possible supposition; and it is surely hard to believe, on Epicurean principles, that in the comparatively vast interatomic voids, without any gravitational fields, such a harmony could occur often enough and endure long enough for a world to exist. We may explain this by saying either that Epicurus failed to notice the difficulty or that Mr. Bailey has misinterpreted him. In favor of the latter view it could be said that the theory of the harmony depends solely on two words of Lucretius, "consociare motus" (for the highly ingenious illustrations from the thunderbolt and the soul do not really support his suggestion more than any other); and that the prior theory which rendered this one necessary (namely that all atoms are always vibrating even in compounds) is itself supported only by a single passage, for the other two that Mr. Bailey quotes do not assert the *universality* of this motion (pp. 331–2). It may be that in the one significant passage Lucretius is speaking loosely, and that it is not true that "there can in any case be no doubt that the doctrine of 'vibration' is true Epicureanism" (p. 347). Perhaps we ought to hold that Epicurus thought that in all compounds some atoms were definitely hooked into each other so that they no longer had any relative motion. In making this suggestion I am assuming that there is in the remains no stronger evidence for Mr. Bailey's view than what he himself adduces. On the other hand, it may be that the language about hooks is not to be taken literally, as Mr. Bailey suggests, or that Epicurus did not notice the difficulty.

Whether his interpretation is mistaken in this matter makes no difference to the general value of Mr. Bailey's exposition of Epicurean atomism. He says that "no account can do justice to Epicurus' physics which does not attempt to grasp it as a whole, to emphasize the interdependence of its parts and the constant control of the principles of the Canonice" (p. 275), and he fulfills these conditions.

Many readers will wonder whether he does not go beyond his author. He himself warns us against attributing to ancient thinkers subtleties and problems that had not occurred to them. He notes that his reconstruction of Democritus' ideas is "cruder and more naïve than that put forward by most of his modern critics", but he holds that they have been led astray by the more abstract thinking of Aristotle and the later Greek philosophers (p. 185); he points out how difficult it is for us to think materialistically enough to appreciate Epicurus on the soul (p. 384); he tells us that Democritus did not raise the question how determinism can permit an ethical doctrine; and he rejects all

subtle interpretations of the Epicurean argument from isonomy in Cicero's *De Natura Deorum*. In these decisions he is following a desirable and neglected principle. It seems to me, however, that there are several other matters in which he should have followed it and has not. I have already suggested that Epicurus may not have realised the full difficulty of combining coherence with vibration in compound bodies without the aid of gravity, nor the contradiction between the language about vibration and that about hooks. It is also quite likely that it never occurred to him that he ought to define the relation between the swerve and freedom of the will more closely (p. 435). Again, he may never have noticed how hard it is, on his sensationalist principles, to account for our certain knowledge of the imperceptible atoms and void. I do not think that, in making this suggestion, I am condemning him as "a loose or dishonest thinker" (p. 426). Nobody can possibly realise all the problems that his own view raises, and this particular one would not very easily occur to a person living before the days of 'epistemology'. In fine, Mr. Bailey, though he aims at giving "the 'plain man's' exposition of what Epicurus intended to be the 'plain man's' philosophy" (p. v), is sometimes not 'plain' enough. In one single instance he seems to be too 'plain'; that is where he says that Democritus' theory of knowledge "does not fit into any of the modern categories", after he has given an account of it which seems to make it very similar to Locke's (p. 185).

Lastly I will notice his view of ἡ ἐπιβολὴ τῆς διανοίας. He examines the occurrences of the phrase in a full and penetrating appendix, and concludes that "the act of mental apprehension", when applied not to sensations but to concepts, is "what we might call in modern phraseology the 'immediate intuition of a self-evident proposition'" (p. 428), and that this is the means by which the first principles of atomism are known. This view violently strains the fundamental principle that the criterion is sensation, a difficulty that Mr. Bailey does not appear to notice. Nevertheless, I think it ought to be accepted, in view of section 62 in the letter to Herodotus and Diogenes' statement that the Epicureans added τὰς φανταστικὰς ἐπιβολὰς τῆς διανοίας to the criteria. The objection can be got over by recalling, what Mr. Bailey brings out very clearly, that sensation and the most abstract thought are not very different kinds of atomic process according to Epicurus.

RICHARD ROBINSON

CORNELL UNIVERSITY

Le mouvement humaniste aux États Unis. By Louis J.-A. Mercier. Paris, Librairie Hachette, 1928. Pp. x, 282.

The primary purpose of this volume is to acquaint French readers with the humanist movement in the United States, as a means towards the larger purpose of effecting a closer intellectual understanding between France and America. The dependence of the movement upon French culture is everywhere in view, and is interpreted as one sign of French spiritual leadership. Despite this special perspective, pardonable in an author who is himself French and a professor of French in Harvard University, the movement is fairly and skilfully presented in these pages. The author confines himself to an exposition of the views of three exponents of humanism, W. C. Brownell, Irving Babbitt and Paul Elmer More, devoting more space to the first two. In order to give French readers a sample of the writing of each, M. Mercier has included his own translation of Brownell's essay on Emerson from *American Prose Masters*, an abridgement of the chapter entitled *Humanism and Imagination* from Babbitt's *Rousseau and Romanticism*, and a translation of *Victorian Literature and the Philosophy of Change*, from the seventh volume of the *Shelburne Essays* of Paul Elmer More.

In general, the larger ethical and cultural significance of these writers as standing for the philosophy which they call 'humanism' is stressed, as against any more special significance they may have as critics and historians. Thus in the chapter on Brownell it is Brownell's criticism of American life in terms of his interpretation of French culture that receives the emphasis; in the chapter on Babbitt it is Babbitt the moralist whom we behold, the exponent of the 'straight and narrow way', of 'ethical work', of the '*frein vital*', of moderation, the Cassandra-like prophet of the doom of American civilization, rather than, for example, the subtle discerner of æsthetic distinctions of *The New Laocoon* (his best book, in my opinion); in the case of More, the interest centers in More's effort to attach humanism to supernaturalism. Throughout M. Mercier writes as a partisan of the movement; there is, I believe, not a single word of criticism. This is doubtless a limitation, yet one that has its compensation in that any reader can get from the volume what it aims to give—a persuasive statement, unclouded by counter views, of what these three men stand for in America. A more critical study would, I think, establish the justice of the following brief estimate of the significance of these writers. Of the three, Mr. Brownell would be shown to be the most truly representative of the American spirit, and, owing to his closer

contact with this spirit, to have most to offer that is constructive. The most genial, he is also the most helpful of the three. Mr. Babbitt's ethical philosophy would be shown to be defective in that it provides no place for the generous and expansive principle in human affairs, and so to be essentially alien to the spirit of American life; even as it is onesided as an interpretation of general human good, and therefore likely to remain a mere 'voice crying in the wilderness'. The same defect is in evidence in Mr. Babbitt's more strictly critical writing, where, instead of viewing literary movements, such as romanticism, as so many genuine, if limited, contributions towards the enrichment of the human mind, he views them as so many false paths,—deviations from the one straight and narrow way. It is this which makes Mr. Babbitt's studies in romanticism so irritating to lovers of romantic literature. Regarding Mr. More, finally, a more critical review of his work would show that a similar defect in philosophy has inevitably led him to seek compensation in a dubious supernaturalism, which, in face of modern science and modern biblical criticism, can be regarded only as a cultural curiosity. But, on the other hand, even the most critical student of these writers would not fail in admiration of their learning and courage, or in gratitude for many illuminating pages of history, criticism and philosophy.

DEWITT H. PARKER

UNIVERSITY OF MICHIGAN

Der Platonismus bei Clemens Alexandrinus. By JOACHIM MEIFORT. (Heidelberger Abhandlungen zur Philosophie und ihrer Geschichte Nr. 17). Tübingen, J. C. B. Mohr (Paul Siebeck), 1928. Pp. 92.

Nowhere can the relation of Greek thought to early Christianity be observed to better advantage than in Clement of Alexandria, the great Christian Gnostic of the second century, the teacher of Origen. Convinced as he was that Christianity was the "true philosophy", and at the same time holding that the thought of the Greeks was a divine gift provided as a preparation for the "kingly doctrine" of Christ, Clement shows at their best the earlier attempts to interpret the results of Greek thought in terms of Christian truth. Mr. Meifort has expounded with great thoroughness and insight the Platonic elements in Clement's Christian philosophy, and shown how they underwent transformation in being put in the Christian setting. There were many elements in Plato's thought that attracted Clement and the other Christian fathers: his doctrine of body and soul, his idea of God and the moral ideal of "likeness to God", and especially his two-world doctrine. But in spite of these outward points of contact

between Platonism and Christian teaching, Mr. Meifort concludes that in their methods the two systems of thought have nothing in common; for the one is the way of rational knowledge, the other is the way of faith. Consequently the above mentioned Platonic doctrines undergo a radical "Christianization" at the hands of Clement. The opposition between the world of pure objects of knowledge and the world of opinion becomes the contrast between the world of faith and the world of knowledge. A similar transformation is effected in all the other above-mentioned Platonic doctrines.

If any criticism is to be made of Mr. Meifort's very able and logical treatment, it is that he passes too easily over certain persistent difficulties in Platonic interpretation (for instance in his identification of Plato's God with the idea of the Good) and overlooks the strong undercurrent of religious mysticism in Plato. Christian faith after all seems to have some affinities, if not with "genuine Platonism", at least with certain motives in Plato's thought. Perhaps the most original portion of this study is the discussion of *θεία μοῖρα* in Plato and its contrast with the Christian doctrine of providence.

GLENN R. MORROW

UNIVERSITY OF ILLINOIS

Platons Selbstbiographie. Von H. GOMPERZ. Berlin and Leipzig, Walter de Gruyter and Co., 1928. Pp. 46.

This is an *Inhaltsdarstellung* of the *Seventh Epistle*, to which are appended a few summary remarks upon the consequences the acceptance of this letter will have for our knowledge of Plato's character and philosophical views. The chief of these is the corroboration it affords to the view made plausible by Aristotle's criticisms and the testimony of other immediate successors of Plato that the Platonic doctrine expounded in the Academy was quite distinct from the doctrine of the dialogues. The delineation of this esoteric Platonism is the purpose of a longer work which the author promises for the near future, and to which the present lecture is a prolegomenon.

GLENN R. MORROW

UNIVERSITY OF ILLINOIS

Philosophy by Way of the Sciences. An introductory textbook. By RAY H. DOTTERER. New York, The Macmillan Company, 1929. Pp. x, 470.

What Philosophy Is. By HAROLD A. LARRABEE. New York, Macy-Masius, The Vanguard Press, 1928. Pp. xii, 204.

These two volumes are both introductions to philosophy, but of very different types. Professor Dotterer's book is, as its title indi-

cates, a textbook for college classes. It is divided into two main divisions. The first, after a brief discussion of the relation between philosophy and the sciences, proceeds to deal successively with the achievements and the unsettled questions of astronomy, geology, physical geography, physics, chemistry, mathematics, biology and psychology. This part of the book is an excellent and concise introduction to science, clear and readable. The chapters on the perplexities of science bring up questions of a philosophical nature in which the author's realistic viewpoint is visible, but alternative hypotheses more favorable to idealism are given due consideration and discussion. The second division of the book is an exposition of the usual problems dealt with in an introduction to philosophy. The first chapter deals with the traditional issues of realism and nominalism, rationalism and empiricism, and idealism and realism; the second with the test of truth; the third with the postulates of science; the fourth with determinism and indeterminism, singularism and pluralism, mechanism and teleology; the fifth with the relation of the ideal to the real; the sixth with optimism, pessimism and meliorism. Though other theories are fairly stated, emphasis is laid in each case on the general view of contemporary realism—correspondence as the test of truth, external relations, emergence and pluralism. The book as a whole is an excellent introduction to philosophy from the standpoint of natural science and contemporary realism.

Professor Larrabee's volume is a popular introduction to philosophy. The presentation is very clear, and naturally free from those technicalities which would hinder its aim as a popular exposition of philosophy. The first three chapters of the book deal with the general definition of philosophy, its origin, and its distinction from common sense, science, religion and art. Emphasis is laid on the value of disinterested speculation in its own right, without reference to practical consequences or the rationalization of prejudice. Chapter IV treats of the methods of philosophy and is acknowledged to be to a large extent a summary of Professor Montague's *The Ways of Knowing*. Chapter V deals with the motives which lead men to philosophize. Chapter VI is a brief discussion of various types of philosophy. The next three chapters summarize the standpoints of naturalism, idealism, realism and pragmatism. Chapter X deals briefly with social philosophy; while the last chapter contains suggestions of philosophical books useful to the general reader, and an index of philosophers. Each chapter is brief and clear, is divided into short paragraphs with head-

ings, and contains a summary at the end. The book is pleasingly written and is a good popular presentation of the subject.

B. C. HOLTZCLAW, JR.

UNIVERSITY OF RICHMOND

The following books were received during the months of September and October:

The Realm of Matter. By GEORGE SANTAYANA. New York, Charles Scribner's Sons, 1930. Pp. xvi, 210.

The Principles of Reasoning. By DANIEL SOMMER ROBINSON. New York, D. Appleton & Company, 1930. Pp. xx, 394.

Essays on the Natural Origin of the Mind. By C. A. STRONG. New York, Macmillan & Company, 1930. Pp. viii, 304.

Moral Sense. By JAMES BONAR. New York, Macmillan & Company, 1930. Pp. iv, 304.

The Coming Religion. By NATHANIEL SCHMIDT. New York, The Macmillan Company, 1930. Pp. 268.

Cicero's Doctrine of Nature and Man. By ALEXANDER LITMAN. New York, 1930. Pp. 42.

Gestalt Psychology. By WILLIS DAVIS ELLIS. California, The Sather Book Shop, 1930. Pp. xii, 172.

Danish Theses for the Doctorate. A Bio-Bibliography edited by The University of Copenhagen Library. New York, Oxford University Press, 1930. Pp. xvi, 396.

A Pragmatist Theory of Truth and Reality. By SAMUEL S. BROWNE. Princeton, Princeton University Press, 1930. Pp. vi, 96.

Conway Letters. Collected and Edited by MARJORIE HOPE NICOLSON. New Haven, Yale University Press, 1930. Pp. xxviii, 516.

God in Freedom. By LUIGI LUZZATTI. New York, The Macmillan Company, 1930. Pp. xl, 794.

Ibn Khaldun. By NATHANIEL SCHMIDT. New York, Columbia University Press, 1930. Pp. vi, 70.

Belief Unbound. By WM. PEPPERELL MONTAGUE. New Haven, Yale University Press, 1930. Pp. viii, 98.

Cogitans Cogitata. By HERBERT WILDON CARR. London, The Favil Press, 1930. Pp. xiv, 112.

Aeternitas. A Spinozistic Study. By H. F. HALLETT. New York, Oxford University Press. Pp. xx, 344.

Adam Ferguson and the Beginnings of Modern Sociology. By W. C. LEHMANN. New York, Columbia University Press. Pp. 268.

Textbook of Logic. By A. WOLF. New York, The Macmillan Company, 1930. Pp. xiv, 324.

The Problem of God. By EDGAR SHEFFIELD BRIGHTMAN. New York, The Abingdon Press, 1930. Pp. 210.

Hinduism Invades America. By WENDELL THOMAS. New York, The Beacon Press, 1930. Pp. 300.

Recent Ethics in its Broader Relations. By JAMES H. TUFTS. Berkeley, University of California Press, 1930. Pp. 181–202.

Rational Evolution. By ROBERT BRIFFAULT. New York, The Macmillan Company, 1930. Pp. x, 302.

Infinity and Ego. By I. C. ISBYAM. London, The C. W. Daniel Company, 1930. Pp. 26.

The Logic of Discovery. By R. D. CARMICHAEL. Chicago, The Open Court Publishing Company, 1930. Pp. x, 280.

Second congrès polonais de philosophie. Rapports et Comptes-Rendus. Warsaw, 1930. Pp. 202.

La pensée de Rabindranath Tagore. By SUSHIL CHANDRA MITTER. Paris, Librairie d'Amérique et d'Orient, Adrien-Maissoneuve, 1930. Pp. 182.

Esquisses de philosophie critique. By A. SPIR. Introduction by LÉON BRUNSCHVICG. Paris, Félix Alcan, 1930. Pp. xvi, 168.

Précis raisonné de morale pratique. By ANDRÉ LALANDE. Paris, Félix Alcan, 1930. Pp. xii, 92.

Die Logik des Prädikats und das Problem der Ontologie. By HEINRICH RICKERT. Heidelberg, Carl Winter, 1930. Pp. 236.

Der Versuch Einer Überwindung des Historismus Bei Ernst Troeltsch. By FRITZ-JOACHIM VON RINTELEN. Halle, Max Niemeyer, 1929. Pp. 60.

Biologie und organische Chemie. By KARL SAPPER. Berlin, Gebrüder Borntraeger, 1930. Pp. viii, 52.

Carl Leonhard Reinholds philosophischer Systemwechsel. By HERBERT ADAM. Heidelberg, Carl Winter, 1930. Pp. 136.

NOTES

The Editors of THE PHILOSOPHICAL REVIEW regret to announce that, with the current number of the REVIEW, Professor William A. Hammond, Professor Emeritus in the Sage School of Philosophy of Cornell University, retires from the position of responsible Editor,—which he has held since the death of Professor James E. Creighton in October, 1924.

The loss suffered through Professor Hammond's retirement from active participation in determining the policies of the REVIEW is very great, and is keenly felt. It would be even more keenly felt were it not for the fact that he has generously consented to continue his connexions with the REVIEW in the capacity of coöperative Editor. The present Editors are heartened to know that his wise counsel, upon which they have learned to lean so heavily in the past, will in the future still be available to them.

All of Professor Hammond's numerous friends, no doubt, join the Editors of the REVIEW in wishing for him every success and happiness in the position which he has accepted in the Library of Congress at Washington, D. C.

Professor E. C. Wilm has received leave of absence from Colorado College during the year 1930–31, and is Acting Professor of Philosophy at Stanford University.

A memorial service for Theodore de Leo de Laguna was held at Bryn Mawr College on November 16, 1930. Addresses in appreciation of his work as a scholar and teacher were delivered by William Pepperell Montague, Brand Blanshard, and Helen Huss Parkhurst.

The following is a list of articles in current philosophical periodicals:

THE JOURNAL OF PHILOSOPHY, XXVII, 18: *Rexford G. Tugwell,* Human Nature and Social Economy; *A. A. Merrill,* Limitations. 19: *Marvin Farber,* The Method of Deduction and its Limitations; *Donald Cary Williams,* The Definition of Yellow and of Good. 20: *V. J. McGill,* An Analysis of the Experience of Time; *J. Loewenberg,* An Alleged Escape from the Paradox of Judgment. 21: *Edwin Ewart Aubrey,* The Place of Definition in Religious Experience; *F. P. Hoskyn,* The Relativity of Inertial Mass. 22: *Brand Blanshard,* The Seventh International Congress of Philosophy.

THE INTERNATIONAL JOURNAL OF ETHICS, XLI, 1: *M. R. Konvitz,* Bradley's Ideal Morality and Fite's Moral Ideal; *Eugene Garret Bewkes,* Humanism and Ethics; *S. Gale Lowrie,* Nationalism; *Norman L. Hill,* International Sanctions—A Decade of Experimentation; *Julius Seelye Bixler,* Germany's Quest for an Absolute; *Joseph R. Geiger,* Prayer and

Behavior Adjustments; *Van Meter Ames,* Business and Art; *Marie Collins Swabey,* Publicity and Measurement.

THE JOURNAL OF RELIGION, X, 4: *Harry F. Ward,* Is Jesus Superfluous?; *Lewis Hodous,* The Anti-Christian Movement in China; *William Creighton Graham,* Religion and Human Worth; *Stephen d'Irsay,* Christian Medicine and Science in the Third Century; *Donald W. Riddle,* The Occasion of Luke-Acts; *Mervin Monroe Deems,* The Place of Asceticism in the Stabilization of the Church; *W. H. Raney,* Who Were the "Sinners"?

THE HARVARD THEOLOGICAL REVIEW, XXIII, 3: *William R. Arnold,* The Relation of Primitive Christianity to Jewish Thought and Teaching; *Edward C. Moore,* Some Aspects of Our Puritan Inheritance; *Julius Seelye Bixler,* Professor Dewey Discusses Religion; *Benjamin W. Bacon,* The Authoress of Revelation—a Conjecture.

MIND, XXXIX, 156: *R. E. Hobart,* Hume without Scepticism (II); *C. D. Broad,* The Principles of Demonstrative Induction (II); *E. J. Nelson,* Intensional Relations.

PSYCHOLOGICAL REVIEW, XXXVII, 5: *Ernest Glen Wever* and *Charles W. Bray,* Present Possibilities for Auditory Theory; *Carney Landis,* Psychology and the Psychogalvanic Reflex; *A. L. Winsor,* Observations on the Nature and Mechanism of Secretory Inhibition; *Edwin R. Guthrie,* Conditioning as a Principle of Learning; *Clarence J. Leuba,* A Preliminary Analysis of the Nature and Effects of Incentives; *Heinrich Klüver,* Fragmentary Eidetic Imagery; *Mapheus Smith,* A Note on Pavlov's Conception of the Unconditioned Response. 6: *Morris A. Copeland,* Psychology and the Natural-Science Point of View; *David Ballin Klein,* Eclecticism; *George Humphrey,* Learning and the Living System; *Clark L. Hull,* Knowledge and Purpose as Habit Mechanism; *Samuel W. Fernberger,* The Publications of American Psychologists.

PSYCHOLOGICAL BULLETIN, XXVII, 8: *Morris S. Viteles,* Psychology in Industry.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY, XIII, 5: *E. G. Wever* and *C. W. Bray,* The Nature of Acoustic Response; *C. E. Ferree* and *G. Rand,* Intensity of Light and Speed of Vision; *A. L. Winsor,* Factors which Indirectly Affect Parotid Secretion; *S. K. Chou,* Reading and Legibility of Chinese Characters (III); *M. A. Tinker,* The Relative Legibility of Modern and Old Style Numerals; *R. H. Thomson,* An Experimental Study of Memory as Influenced by Feeling Tone; *J. C. N. Richards* and *J. P. Guilford,* A New Type of Lip-Key.

THE MONIST, XL, 4: *H. H. Price,* The Descriptive Theory of Science; *Oliver L. Reiser,* Mathematics and Emergent Evolution; *L. J. Lafleur,* Mathematical Antinomies; *Gregory Vlastos,* The Problem of Incompatibility in the Philosophy of Organism; *N. V. Banerjee,* The Problem and

Postulates of Epistemology; *B. M. Laing*, Contradiction, Logic, and Reality; *M. R. Annaud*, An Examination of Hume's Theory of Relations; *Everett W. Hall*, F. H. Bradley on Idea as Image and as Meaning; *J. H. Woodger*, Mr. Russell's Theory of Perception.

THE NEW SCHOLASTICISM, IV, 4: *Francis Augustine Walsh*, The Humanistic Theory of Error; *F. M. Festugière*, Les Origines de l'Idée de Dieu chez Platon; *Rudolph G. Bandas*, The Theistic Arguments and Contemporary Thought.

THE AMERICAN JOURNAL OF PSYCHOLOGY, XLII, 4: *D. Shakow*, Hermann Ebbinghaus; *R. Gundlach* and *M. Bentley*, The Dependence of Tonal Attributes upon Phase; *E. R. Moul*, An Experimental Study of Visual and Auditory 'Thickness'; *J. Peterson* and *F. W. Smith*, The Range and Modifiability of Consonance in Certain Musical Intervals; *E. F. Wells*, The Effect of Attitude upon Feeling; *G. L. Freeman*, The Measurment of Tonus by Deformation of the Tendon; *L. W. Crafts*, Whole and Part Methods with Unrelated Reactions; *A. L. Winsor*, The Effect of Dehydration on Parotid Secretion; *E. E. Cureton* and *J. W. Dunlap*, Some Effects of Heterogeneity on the Theory of Factors; *K. W. Oberlin*, The Relative Immediacy of Sensory, Perceptual and Affective Characteristics; *J. A. Glaze*, The Effects of Practice on Fatigue.

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